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The Journal of the Fire Protection Profession

AUGUST 21, 1929

ESTABLISHED 1877 PUBLISHED BI-WEEKLY

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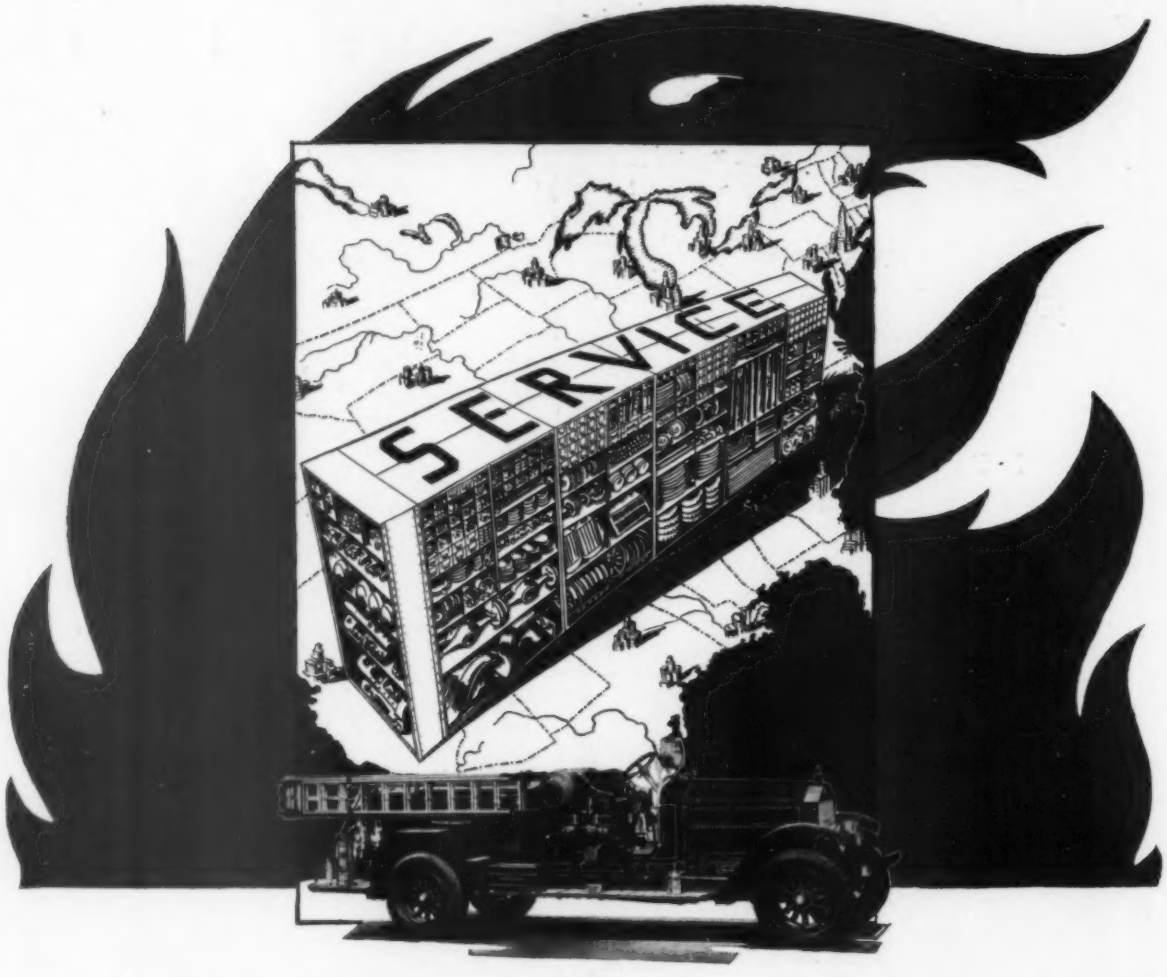

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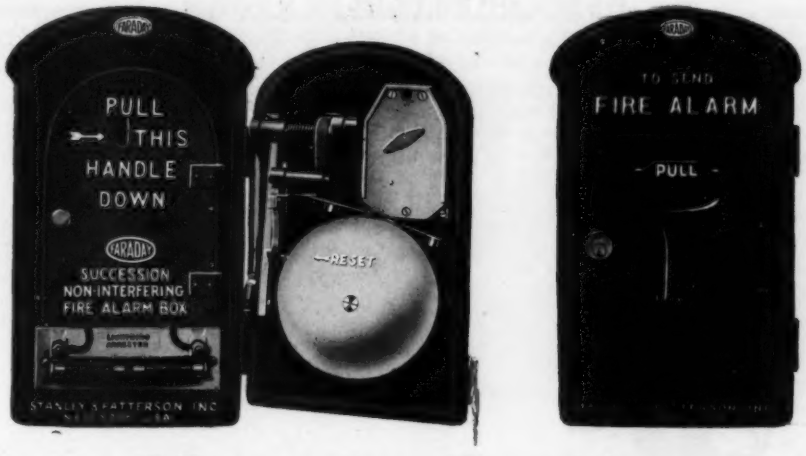

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Can You Help Mr. Ford?

¶ As most everyone knows, Henry Ford is literally scouring the world for authentic historical material of every description for his new museum.

¶ In a letter just received by our editor, Mr. Ford's office writes:

"In gathering together material for our fire fighting records for our museum, we note a History and Evolution of Fire Fighting by Mr. Shepperd in your magazine. We have the issues containing this story up to and including Dec. 12, 1928. Is it possible to procure from you the subsequent file with the rest of this story?

"We should very much like to secure back issues to the inception of the magazine including the pre-consolidation issues. Can you refer us to anyone who is willing to part with their set?"

¶ While we have gladly supplied the copies with Mr. Shepperd's historical article, there is in existence, so far as we know, only one complete set of back copies of this magazine since its inception fifty-two years ago, and that is in our own library.

¶ As much as we should like to favor Mr. Ford we have just a little too much sentiment in our souls to think of letting this treasure get out of our hands. If there is another complete set anywhere we'd certainly be glad to know about it—and so would Mr. Ford.

The Publishers

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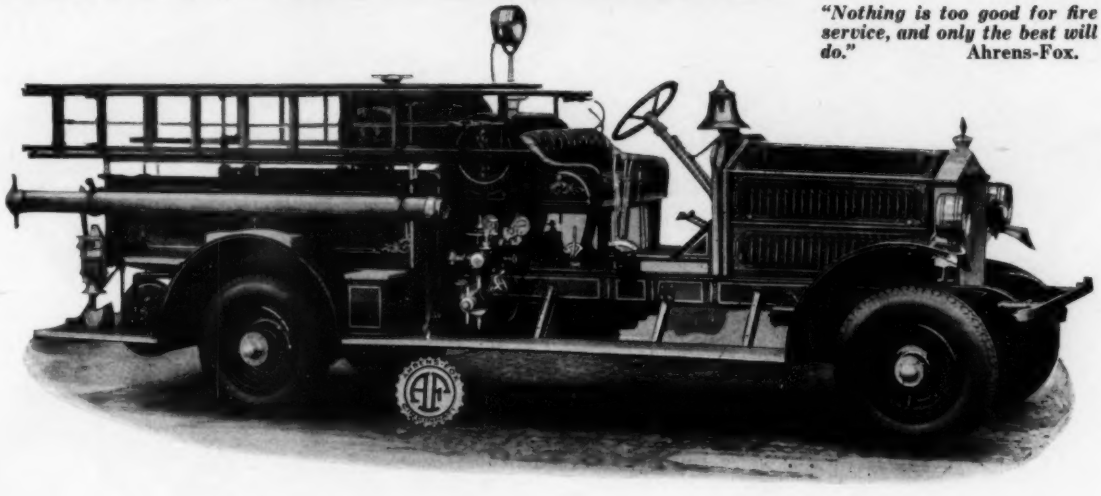

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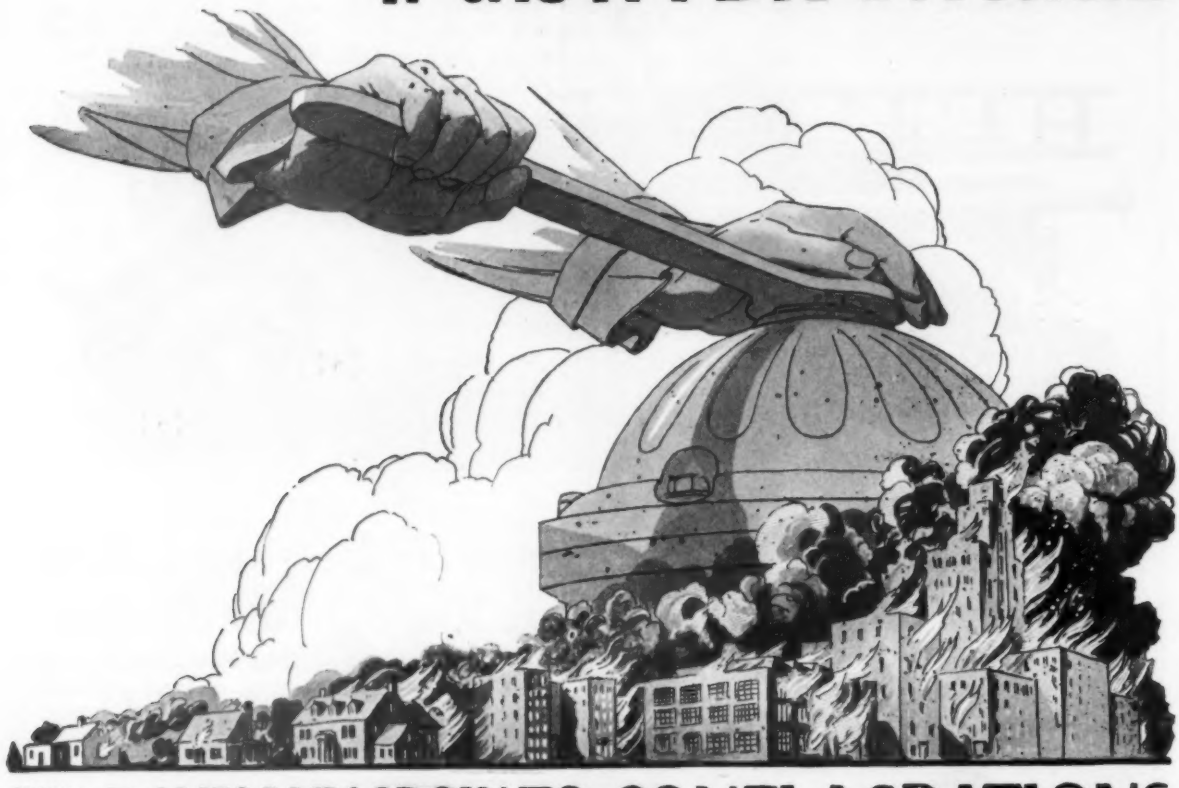
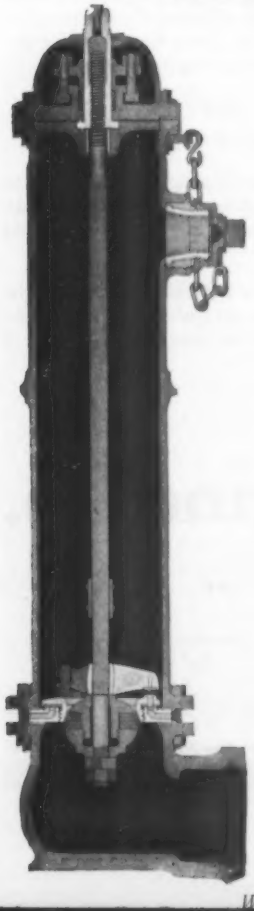


SMALL FLAMES MAY GROW TO CONFLAGRATIONS



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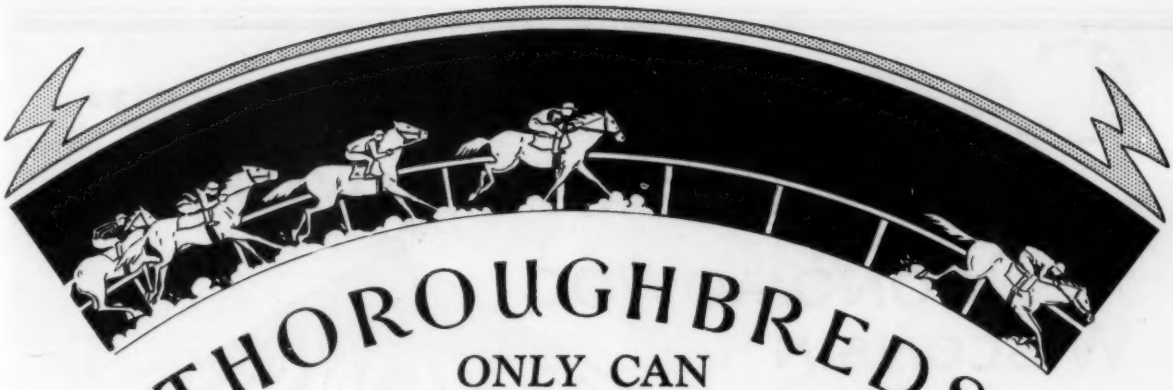

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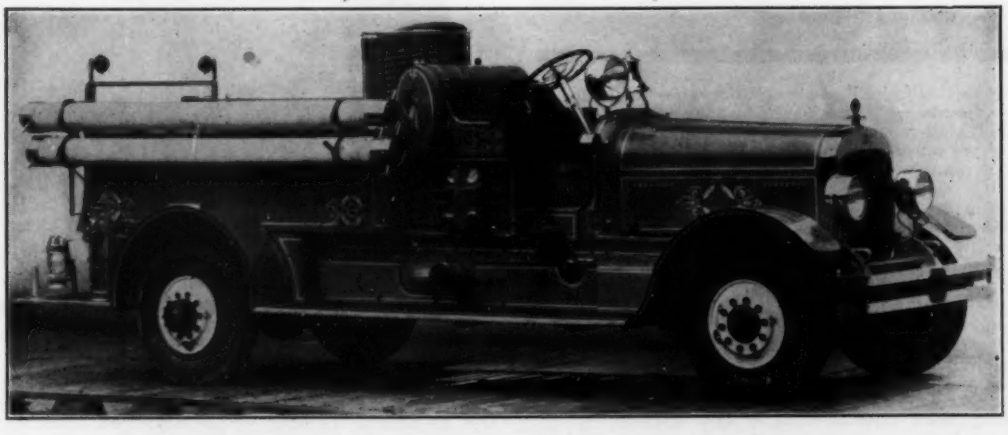

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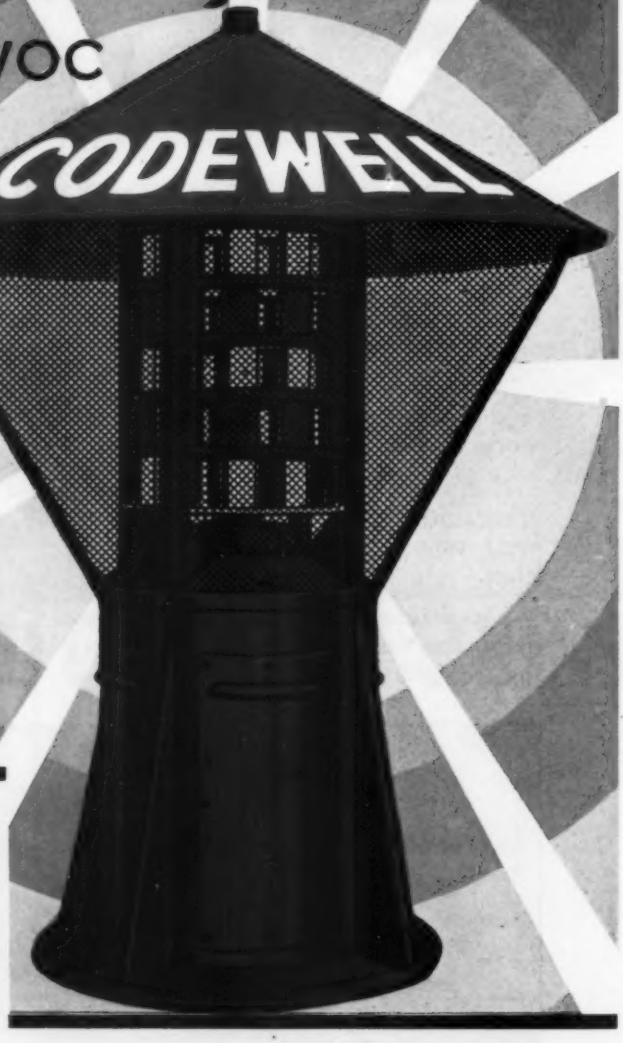

CARRYING POWER and not *Horsepower* is the true measure of a siren's efficiency—this was strikingly demonstrated in tests recently conducted by the officials of Oconomowoc, Wisconsin.

A 5 *H.P.* Gamewell Codewell was set-up alongside of a 10 *H.P.* coding siren of another manufacturer which was explained, represented their latest development. The tests which followed were witnessed by the Mayor, Fire Chief, and three members of the Oconomowoc Fire Committee; also three representatives of the other manufacturer and two Gamewell representatives.

The results of the tests showed:

1. At a distance of 1½ miles from the location of the Codewell and other siren, the Codewell was clearly more powerful and distinct in every case.
2. The code produced by the Codewell could be readily distinguished close at hand or at a distance.
3. The code produced by the other siren could not be readily distinguished close at hand and was weak at a distance.
4. According to the opinion of the official in charge of the installation of both, the Codewell was less expensive to install.
5. It was also the opinion of the same official that the Codewell was less complicated in its construction than the other siren.

The combined opinion of the Oconomowoc officials was that the 5 *H.P.* Codewell had demonstrated in a fair test its superiority over the 10 *H.P.* siren. Further tests conducted with the Codewell and two additional sirens brought in by the same manufacturer, served to further convince the officials of the superiority of the Gamewell Codewell, which they purchased.

If you are in the market for a coding siren, we shall be glad to give you further details of how the Codewell has won other tests.

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FIRE ENGINEERING

(A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER)

The Journal of the Fire Protection Profession

VOLUME LXXXII AUGUST 21, 1929 NUMBER 17

What Are the Fire Dangers of Modern Refrigeration?

Characteristics of the Various Substances Used in Ice Machines—Experiences in Dealing With Hazards of This Type

By THOMAS F. DOUGHERTY, Assistant Chief, New York Fire Department

REFRIGERATION plays an important part in the life of the city resident. Each large food establishment has its private refrigerating plant; theatres cool air to attract summer patrons; there are cold air storage places for furs and for fruit; large apartment houses have installed multiple systems for the benefit of the tenants, and now electrically operated plants are being sold for the individual home or apartment. What problems does this progress bring with it for the fire department? The following paper is timely and illuminating.

Assistant Chief Thomas F. Dougherty, New York Fire Department

In New York we have considerable trouble with mechanical refrigeration. It is a big subject, for that method of refrigeration is rapidly coming into general use. We have a great number of large plants, and the number is increasing from day to day.

In so far as household refrigeration is concerned, I doubt if there is any great danger attached to the individual unit—that is, the little refrigerating box used for domestic use. We have them in apartment houses in what is called the multiple system. Now the multiple system implies that the owner of that property has a refrigerating machine in his basement or cellar and that he supplies the refrigerating element to the box or compartment in each apartment. There might be a little more danger attached to that type than in the one used in households, which is the individual unit, for the reason that a much greater volume of refrigerating gas would be liberated if a defect developed in the system.

Where do we find refrigeration today? We find it in the large warehouses where perishable foodstuffs by the thousands of tons are stored—cold storage warehouses, we term them. You might get 45,000 or 50,000 pounds of ammonia gas in some of these structures. We also find refrigerating machinery in your large ice plants. We also find it on steamships; we find it in fur storage; we find it in wholesale and retail confectioneries; we find it in retail butcher establishments; we find it in large meat abbatoirs; we also find it in hotels and restaurants; and we are coming down to the day when you will find it in all your large theatres, where they utilize it for air-cooling purposes.

I am not an alarmist, and I am talking to you from the standpoint of a practical fireman, as I view mechanical refrigeration. I say that it is up to every fire chief, if he has not already taken a deep interest in this subject to do so without delay for the protection of his community; and not alone for the protection of his community but for the protection of his officers and men who may be called upon to act in an emergency where a leak on a mechanical refrigerator occurs. I say to you, dig down deep in this subject.

As I said before, I am not an alarmist, but I have sufficient common sense to know that at some time you are going to have trouble of one kind or another.

I am going to mention some of the refrigerating compounds that are used. Some of the names, as far as the name goes, or as far as the compounds themselves are concerned, are away over my head. They are better fitted for a man who is a qualified expert in chemistry, who may glance at such a name and know exactly what it represents. I cannot do that, but I have tried to get a lot of information that may be of value to you.

Ammonia Forms Explosive Mixture

First we have ammonia gas which is the more generally used; carbon dioxide; ethane; propane; methyl chloride; sulphur dioxide; iso-butane; butane; ethyl chloride; dichloromethane; dichloroethylene; trichloroethylene.

When you have stuff like that to handle, it is tough stuff. Ammonia gas is a strong irritant and a suffocating gas, and it forms an explosive mixture in the air, the explosive range being 13% to 26% of gas by volume. It is more easily explosive when the gas is impregnated with small particles of lubricating oils which it picks up while circulating through the system.

With reference to the hazard to firemen at a fire, the high pressure found in ammonia apparatus is increased where fire is within the structure, and such increase in pressure may cause mechanical rupture or a leak. When any structure is filled with this liberated gas, if the building is fire-involved, who knows whether or not an explosion will occur? The chemists tell us ammonia is explosive when mixed with air. In New York we have considerable to do with ammonia troubles but rarely do we get an explosion. That may possibly be due to the fact that we have not just the right mixture to cause an explosion. That is the only reason that I can account for the small number of explosions that occur in ammonia refrigeration plants.

Now at a fire in New York, because of regulations that we have covering them, we always have the advantage of

utilizing pressure releasing devices; our regulations compel the installation of these devices on refrigerating plants, especially in plants which have a capacity of three tons or over. A refrigerating plant with a capacity of three tons or over must also have what we call a "mixer," and that mixer consists of a siamese connection placed on the front of the refrigerating structure connected to a pipe which leads to the public sewer. In conjunction with the pipe which leads to the sewer, there is a pipe connected with the ammonia system, and right close to where the siamese is located there is a locked box, and in that locked box are emergency valves. The box has a lock on it which is similar to that on the fire box in the city of New York, and the key used to open the fire box also opens the locked box connected with the mixer.

There is a standing order in the New York Fire Department that whenever a fire occurs in an ammonia refrigerating plant it is our duty to liberate the gas that is within the system, so that when we recognize the building as being a refrigerating plant, we lay a line of hose from the pumper to this siamese connection and start pressure at 50 pounds. Just as soon as the water is running, a man opens the box and opens the emergency valve and the ammonia in that system is liberated and mixed with water and carried into the sewer.

Experiences at Some Fires

In ammonia plants where the capacity does not exceed three tons, we have a pipe connected with the system and a valve that permits of our liberating the ammonia gas. In this case we do not connect any line to it, but that pipe is extended above the roof of the structure and the gas passes out into the outer air.

I want to tell you a few expeeriences I have had, as well as two or three with which I had no connection, but with which men in our department did.

A big cold storage warehouse on Horatio Street: a fire broke out in the structure, in which men were operating. Conditions were not good, and suddenly there was an explosion, a very forceful explosion. A later investigation showed it was ammonia gas which had exploded, owing to presence of an open light or flame.

At a retail butcher establishment in Brooklyn: business going on; customers in the store. It was equipped with a small refrigerating plant. Suddenly there was an explosion of ammonia gas, or else a mechanical rupture, I don't know which. Several lives lost.

At another I went to one night, a very large ice-making plant, a leak or rupture occurred. We couldn't get within one block of that structure for a time. It was in a thickly congested neighborhood, a tenement neighborhood. We saw women with babies staggering out of the tenements, young men, old men, children, all breathing that irritating gas. A condition that I hardly realized could occur in the city of New York was what I witnessed on that particular evening, until such time as some of our men who were masked got to the valves and made a proper shut-off of the valves controlling the system. At that particular plant, I am sorry to say, one of the big corporations of the city of New York, the American Ice Company, in putting in the siamese connection some one of their engineers had run a 10" or 8" pipe up from the siamese connection and it wasn't capped over; it was open on top. There is one of them still in existence in New York today, and when one of our men, in trying to bring in a condition which might make it livable for the people in the vicinity, opened these valves, instead of the ammonia gas going down into the sewer and mixing with the water, it was coming out of the opening in the top of this 8" or 10" pipe I speak of, and that is what created the unusual condition in that district. One that particular evening I know some friends of mine who got the odor of ammonia ten blocks away from the refrigerating plant.

Searchlight Plant No. 1 in Use in San Francisco

Sam Birmingham, superintendent of the corporation yard of the San Francisco Board of Public Works, has designed a new type of fire apparatus for the department. It is officially known as "Searchlight Plant No. 1" and gives off 1,000,000 candle light. It has five 1,000-watt lights and eight 500-watt portable lights. The truck costs $8,200 to build.

Protective Devices Are Necessary

Another instance, in a retail butcher shop, a leak developed, a leak that permitted the escape of gas in considerable volume. An employee on the premises went down in the basement to handle the situation. He was gassed so quickly in attempting to shut off the valve that he died right at the spot where he stood as he tried to open the valve.

I could tell you a number of cases of ammonia gas out of control that might be interesting, but I think I have told you sufficient.

Any man, any fireman, who has to act in an emergency where a leak of ammonia gas occurs has to have certain protective devices before he enters those premises. He should have an efficient mask, but there is one other thing he must have for his own physical well-being; he must have wading boots to protect him from the irritating effects that this gas has on the body. Even with the efficient measures employed in our rescue companies, the men who enter these ammonia refrigerating plants where something has gone wrong usually come in contact with concentrations that will burn them around the back of the neck, around the ears, in any place where there is moisture. They should have wading boots and the proper masks to enter any of these buildings.

In handling the ammonia situation, all men should be instructed as to the layout of these systems. I would like to offer a suggestion that you may utilie if you see fit to do so, and that is in the event of not having a mixer, if you are interested at any time in the installation of a pressure releasing device, have this valve that will control the system for release of the pressure located on the outside of the building, in a locked box, and in addition to that have a diagram of the mechanical appliance that will plainly show the location of each valve in the system that will bring any leak or mechanical rupture under control. I think this a good plan to follow. I have spoken to a few of the members regarding the point whether they have any trouble with ammonia plants, and I didn't hear any of them refer to any valve that will liberate the ammonia in event of trouble. As I say, train your men to get to the valve that will liberate the gas in case of fire and also instruct them in the layout of the plant, in addition to having a diagram in an accessible place for their use in time of emergency.

Carbon Dioxide Now Used

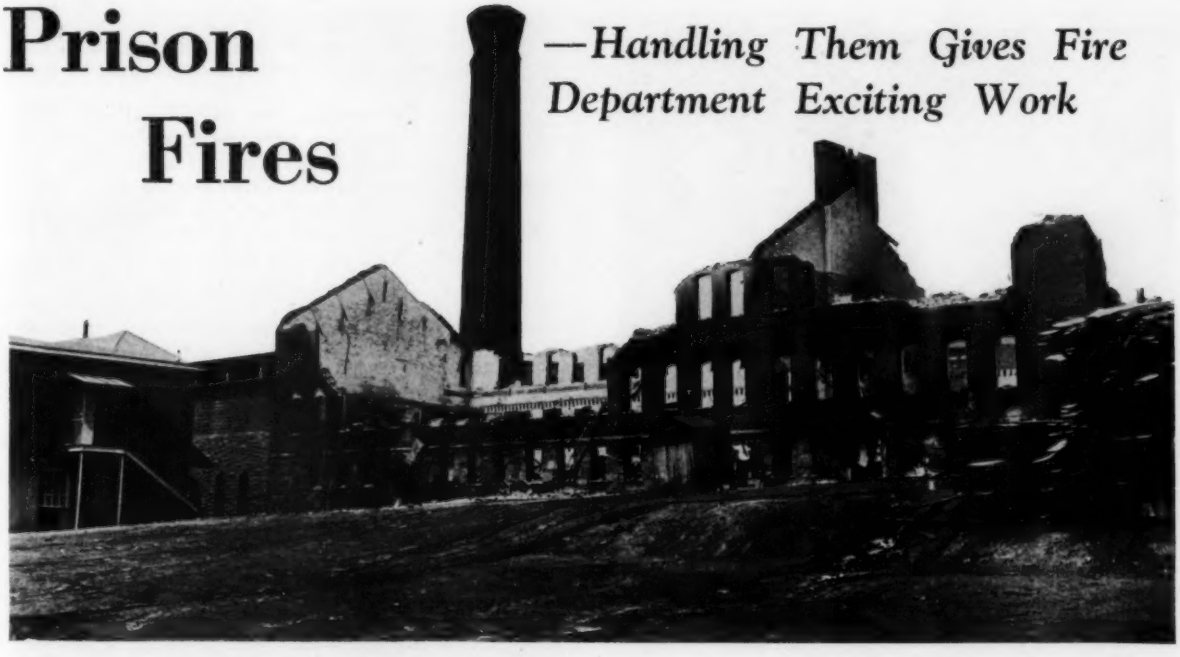
Now we come to another gas—carbon dioxide. Carbon dioxide is used in many refrigerating plants, but not as extensively as ammonia. In my opinion, the great danger of that gas is due to the excessively high pressures at which it is used. It is a highly expansive gas. Of course, I know the cylinders and other containers have certain safety devices, but regardless of what the manufacturers may do to have their plants perfect, sometimes things go wrong. We are not sure whether those pressure releasing devices are going to operate or not.

First, I will tell you what test is made on these systems. The test is put on them (for the high pressure side) at 1,500 pounds to the square inch; on the low pressure side, if the safety valve is on that side of the system, they put a pressure of 750; without the safety valve there is a pressure of 1,00 pounds to the square inch. Just imagine 1,500 pounds to the square inch. Do a little bit of calculation on this basis, and it will bring home just what 1,500 pounds to the square inch means. Now here is a condition where 1,500 pounds to the square inch means you have the equal of 216,000 pounds of dead weight on a square foot.

(*Continued on page 736*)

Prison Fires

—Handling Them Gives Fire Department Exciting Work



Ruins of a Portion of the Clinton Prison After Convicts Made a Futile Rush for Liberty

SOCIETY, after it has committed dangerous or abnormal persons to penal institutions, proceeds to promptly forget about the whole matter and the danger that develops when a thousand or more prisoners long for the freedom they once enjoyed. Fires that broke out in three widely separated institutions emphasized what may happen and some of the precautions that should be taken.

Both the fire department and police reserves were called out on July 16 to quell a blaze that broke out in the house of correction on Deer Island, Boston, Mass., harbor. An investigation was started immediately to determine how the blaze originated. This fire was the first of a series of blazes, the others not mysterious, that developed in penal institutions.

Fire developed in several buildings of the Clinton Prison, Dannemora, N. Y., when the 1,300 hardened criminals attempted a wholesale dash for freedom on July 22. The prison is termed the "Siberia of America." Here are quartered prisoners who have been found to be unmanageable at other detention houses in New York state. The men are deprived of all liberties enjoyed at institutions where so much discipline is not enforced.

The first warning of trouble came from smoke circling upward from a carefully placed pile of shavings in a corner of the carpenter shop, during the end of a ten-minute rest period. In the yards, the convicts who had marched in orderly formation from the mess hall after breakfast, refused to obey orders to march to the workshops. The prison siren then shrieked its warning that the population of the prison was on a rampage.

Two keepers were caught in the rush of prisoners and injured. The force of 124 prison guards mounted the stone wall as the prisoners broke up into three groups in their rush for freedom. Three convicts were killed. Prisoners entered the power house and soon put it out of operation.

The prison is in a forbidding setting. It is nestled away far from any large village. It has cotton mills, blacksmith shops, tin shops and carpenter shops. The men are kept under the strictest discipline, but at the time of the fire and attempted break, the prison was overcrowded.

Fire companies from Dannemora, Morrisonville and Plattsburgh arrived to fight the blaze. They were unable to enter the yard, for the rebellious convicts still had control, and to open the gates to permit the apparatus to enter would make an opening through which the men could escape. Firemen with hose lines fought the fire, as best they could, from the prison walls. They wetted down whatever buildings could be reached with hose lines from these points. A shallow pond served as the town's reservoir, and this was soon emptied.

The damage done by fire was estimated at $200,000. Two buildings, a storehouse with 75,000 feet of lumber, and the structure housing the carpenter shop and weaving shop were destroyed by fire. Another building which contains the dye works was partially destroyed.

By noon the prison forces had control and in the evening the men were locked in their cells.

Wholesale Break Tried at Auburn

Six days later, convicts armed with riot guns and ammunition, stolen from the prison arsenal, tried to storm the walls of the state prison at Auburn, N. Y. Two were shot and killed in the rush, while four others escaped.

As the prisoners were coming upstairs, a trusty gave the signal tap to the guard to open the gate. Fifty or more prisoners then broke from line and beat and kicked the guard until he fell unconscious. They overpowered another guard in the hall, and took his keys with which they gained entrance into the prison arsenal. The convicts seized between thirty and forty riot guns and

House of Correction in Boston Harbor Damaged by Mysterious Blaze

rushed to the yard, followed by other prisoners. Convicts with fire brands rushed about the yard, which is hemmed in by workshops and prison buildings.

With the first alarm, seven fire companies from Auburn responded. Firemen could do little because of the convicts, except to prevent incendiary fires from spreading to the main prison buildings. Apparatus sent from Syracuse and other neighboring cities helped somewhat. Syracuse is twenty-six miles away. It was not until the riot was quelled that the combined efforts of the firefighters became really effective.

Convicts Cut Fire Hose

The first fire engine rolled through the main gate, but hydrants within the yard proved inadequate and hose lines had to be strung into the prison reservation from the outside.

As soon as firemen directed a hose line upon a burning building, the convicts who outnumbered the firemen, descended, sometimes turning the hose on the firefighters, but more often chopping the hose with tools commandeered in earlier rushes. At this moment, smoke

Fighting the Uprising in the Prison at Auburn, N. Y.

The airplane view of the prison shortly after the 1,700 inmates mutinied, indicates the problems that had to be met by the fire departments. Feeble streams can be seen directed into the prison yard from the wall at the left of the photograph. Many convicts can be seen huddled in small groups in the enclosure.

was seen curling up from the main building, and for a while it was feared that the prison proper might be seriously damaged.

It was only by breaking the main band into little groups that state troopers were successful in quelling the riot. Acrid smoke made the cells untenable. The convicts were herded in one corner of the prison yard away from the burning buildings. It was only at this time that the firemen were able to do effective work.

The furniture plant, the cane shop, the prison kitchen, the machine shop, the old State shop, which soon was to be torn down for a new one, and the Bertillon establishment, with all its documents of criminal identification were destroyed. The shop where automobile license plates are made was damaged, but the firemen succeeded in saving it from complete ruin.

Shortly afterwards there was a minor riot at the Federal prison, Leavenworth, Kans., but no fires developed.

Fires in prisons are serious, especially in those institutions wherein men are serving long detention periods. In such cases, the convicts have little to lose in their dash for freedom and are willing to take desperate

The Aftermath of a Chaotic Dash for Liberty

Riotous prisoners at Auburn, N. Y., being marched back to confinement. Note how close together the buildings are, and how a fire could easily spread.

chances to get outside the prison walls. All who stand in their way are in danger of being killed or seriously injured. Firemen, who are generally among the first to respond to uprisings of this character, are placed in greater danger than when fighting the most treacherous fires. They do not know when some wild bullet or a missile directed by a convict will strike them. A powerful hose stream directed back on the firemen can also cause considerable damage.

When one considers the force with which a stream strikes an object, one can visualize the real physical hazard.

Once there is an outbreak, it is impossible for fire apparatus to enter the prison yard, where it could do the most good. And even were this possible, it is doubtful if the enraged prisoners would permit the fire that might aid their escape, to be extinguished. In addition, the safety of the men is to be considered.

In labor disorders and college student celebrations, charged hose lines have been used to break up the mass rioting. But with prisoners it is different. Liberty means so much to them that they are willing to take

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A Canadian Dry Cleaning Plant Fire That Started by Explosion.

This blaze occurred a few years age at Winnipeg, Canada. So well was it handled by the fire department that the structure was saved with a moderate loss. To the extreme left may be seen the wall of annex building blown out through explosion of naphtha fumes mixed with air. Only two men were injured in the explosion, and neither of these seriously, which is rather remarkable.

Fires Where Special Equipment Is Needed

Presence of Inflammable Volatiles, and Large Quantities of Combustible Material Recently Treated Thereby, Give the Department Plenty to Do.

DRY cleaning, as classed by Gorham Dana and William D. Milne in "Industrial Fire Hazards," fall into four processes as follows:

1. "Scrubbing" or immersion and agitation in a flammable liquid solvent in open vessel.
2. "Brushing" or "scouring" with flammable liquid solvent or solution, or other cleaning preparation.
3. "Spotting" or the local application of flammable liquid solvents or other cleaning preparations to spots of dirt, grease, paint or other stain. This method is usually supplemental to either methods 1 or 4.
4. "Washing" or immersion and agitation in a flammable liquid solvent in closed containers. The solvent commonly used in the above methods is gasoline or benzine. The use of this liquid involves considerable hazard because of its volatility and the combustible and explosive nature of the mixture formed by its vapors and air under ordinary operating conditions.

The scrubbing process is very hazardous because of the open containers, which expose large quantities of volatile flammable liquids to the air. It is usually safe to assume that there will be explosive mixtures of gas and air wherever such processes are carried on. This method of cleaning is used where the articles to be cleaned are of a character which prevents their cleansing by the more ordinary method of "washing." Such articles are placed in scrubbing tubs containing liquid solvents, where they are scrubbed by hand. Brushing, or scouring, insofar as the fire hazard is concerned, is in a class with the scrubbing process. The chief difference is that instead of the article being immersed in tubs of the solvent, they are placed on a table and scoured or brushed with brush dipped in the solvent.

Spotting involves considerably less hazard than either of the methods mentioned above. As the name suggests, it consists of the application of the solvent to spots of dirt, grease, paint, etc. These spots, which have not been removed by the washing or scrubbing processes, are usually eliminated by the spotting method. In this process a mixture of carbon tetrachloride and alcohol is sometimes used instead of the gasoline or benzine.

Washing, as a process, is appreciably less hazardous than the open methods previously described, particularly if washing machines are well designed. In this process articles to be cleaned are tagged and then, in case of clothing, a thorough search is made for foreign material, especially matches and metallic substances, which are removed before the garments are sent through for washing. The articles are then placed in a dusting machine where the loose dirt is removed. After dusting, the articles are placed in the washing machine, which is partly filled with the solvent, usually naphtha (gasoline). The machine is then closed and the cylinder caused to revolve by mechanical connection for a definite time. The solvent is then drawn off, the articles removed from the washer and placed in a centrifugal drier or extractor. This is the first step in the drying process. After partial drying in the extractor, the articles are transferred to the drying tumblers where the drying operation is completed.

While modern regulations in many cities require that

dry cleaning establishments be located in outlying, sparsely built sections, there are a great number still located in the industrial sections of cities. They constitute a real severe hazard, particularly where the buildings are not built according to modern design. Many dry cleaning establishments are found in brick structures with wood joists and wooden flooring. It is unnecessary to add that once fire starts in such a building, if explosion does not demolish it, the fire may be expected to complete the work.

To make matters worse, a large number of the old dry cleaning establishments do not store inflammable solvents underground, as required by modern regulations. Instead, they are kept either in the basement of the building, or on the various floors in metal containers. In the event of fire, rupture of these containers may be expected, with the resultant increase in intensity of the fire.

Special Fire Protection Equipment

Most dry cleaning establishments now employ foam apparatus, either in the form of automatic equipment or portable appliances. Such apparatus is very necessary, particularly in the older type of establishment, due to the fact that when containers let go the floor will be quickly covered with a sheet of burning solvent.

Automatic sprinklers, where they are present, afford an excellent means of holding the fire. By their use exposed containers can be kept cooled to such a point that they will not burst from exposure to fire. In addition, automatic sprinklers will retard the spread of fire.

If steam apparatus is employed, particularly in the wash room and drying room, it will prove very effective in delaying the spread of the fire and thus give the department an opportunity of bringing into play more effective extinguishing means.

Carbon dioxide is an efficient alternative or additional extinguishing system to steam jets, and can be used with effect if present in sufficient quantity. However, when the fire originates in a dry cleaning plant it usually spreads with such great rapidity that it would require tremendous quantities of carbon dioxide gas to extinguish it, so that unless permanent installations are provided, little can be expected to be accomplished by the use of this material by the fire department.

Handling the Fire

It is rarely the case that the fire department upon responding to a dry cleaning plant fire finds a portion of a floor afire. Usually an entire floor is involved, and sometime the entire building. In any case, the first step to take is to stretch a line to the sprinkler system if such is available. After this point has been taken care of, then the method of operating will depend largely upon the layout of the plant, its size, and the progress of the fire.

Make a size-up of the situation, and determine the procedure necessary. If fire is burning on one floor, and floors above are smoking, but are not ablaze, be on the lookout for explosions. The heat of the fire below may distil off inflammable vapors from the floor above, or from inflammable liquids on this floor, and when the vapors so produced reach a proper mixture with air, and are ignited, an explosion will result. Such explosions are usually of terrific force, and in many cases will blow out the walls of a building. For this reason, unless the building is thoroughly ventilated, all the windows being opened and scuttles and other covers on the roof likewise opened, department should proceed cautiously into structure.

If ventilation can be provided by the department without endangering the men, this should be done at once by opening up all windows, doors and all roof covers.

If permanent foam installation, steam jets or carbon dioxide installations are available, and can be reached, employ these means at once to check the fire. They will prove far more effective than water streams where inflammable solvents are afire.

If such equipment is not at hand, then the use of foam generators with foam powder may prove very effective in checking the fire on floors or in open containers where inflammable liquid is burning.

Heavy streams are more effective than small streams for operating on fires of this type, due to their greater range and their greater cooling power. Such streams should be used liberally to protect exposed floors which are not afire as well as operating on the fire itself—after other means have accomplished their purpose, or have proved futile.

As a precautionary measure to protect men, where operating on floors below fire floor, instruct them to be on the alert for burning liquids dropping from the floors above. Such liquids, reaching the elevator or stair shafts, may carry the fire to floors below and with such rapidity that men may be cut off from escape unless plans for retreat have been carefully arranged beforehand.

If special appliances such as foam, carbon dioxide and steam do not extinguish the fire, but it gets beyond them, then there is only one thing to do, and that is drown the fire out by the use of plenty of water. There will be little danger of damage to building in the event of explosion provided all windows, doors, and roof coverings are opened. There will also be little danger to the men operating on the street from falling walls due to explosion under the above conditions.

NORTHWEST FIRE SCHOOL TO MEET AT UNIVERSITY OF MINNESOTA

David J. Price Will Give Talk on Dust Explosions Illustrated With Motion Pictures —Lectures to Be From September 16-20

THE program for the second annual session of the Northwest Fire School, to be held here, September 16 to 20, has been announced by W. C. Norton, fire chief, Winona chairman of the fire school arrangements committee. Copies of the program together with an invitation to attend the school, are being sent to the mayors and councils, fire chiefs, and other interested individuals in nearly 1,500 cities and villages in Minnesota, North Dakota, South Dakota, Iowa and Wisconsin.

The morning sessions, which will be devoted to the addresses and discussions, will be held in the auditorium of the Music Building of the University of Minnesota. Each afternoon drill squads composed of the men attending the school will receive special training in fire department evolutions the first aid. This instruction will be held at the Minneapolis Fire Department drill school. In the evolutions special attention will be gven to the fire fightng problems of the smaller municipality.

The first morning session on Monday, September 16, will convene at ten o'clock, following registration at nine o'clock. G. H. Parker, chairman, Fire Service Extension Committee, National Fire Waste Council, will open the school by discussing its purpose and procedure. He will be followed by Sanford Herberg, engineer, General Inspection Bureau, Minneapolis, who will present the subject of "Rules and Regulations concerning the Establishment, Maintenance, and Operation of Fire Departments, Their Value, Provisions for Enforcement and Discipline." R. L. Daniel, engineer, also with the General Inspection Bureau, will discuss "Administration and Paper Work of the Department." In connection with the addresses of Mr. Herberg and Mr. Daniel it is

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Organization of State Firemen's Schools

Short Courses for Firemen Now Being Given in Twelve States—School for Training New York State Instructors Is Successful

By J. H. HOWLAND, Engineer, National Board of Fire Underwriters, New York

GREAT efforts are being made to reduce the annual fire loss. One way, which has met with immediate response, has been for short schools where firemen could be trained to be more efficient in their work. The idea, which was started in Iowa, has taken hold in other states. A committee has now been appointed to perfect plans for short extension courses to be given at state universities.

Prior to 1900 there was little evidence that organized fire departments were operating along scientific lines. It was during the first decade of this 20th century that officials of our larger city departments first recognized the advantages of systematic drills and training and the urgent need of uniform fire fighting practices and operations.

Officers Sent Away for Training

For a number of years New York, Boston and other large cities had been sending all their recruits to 30-day drill schools; others followed until to-day almost every large city department conducts such schools not only for recruits but for the entire membership. The great majority of our small city or town departments could not be expected to maintain the drill towers, equipment and other necessary training facilities so that a number of our state universities in co-operation with fire marshals, firemen's associations and others inaugurated short annual courses of instruction, drills and training with a view to benefiting a great many firemen that could not otherwise be reached.

The idea was first promulgated by the Iowa State College, which held its first course at the request of the Iowa State Firemen's Association at Ames, Iowa, in October, 1925, four months after a similar course had been staged under the auspices of the University of Illinois and under the direction of John C. Gamber, State Fire Marshal. The success met with in these first two courses resulted in an awakening of interest, first in the mid-west and north-west sections of the country and more recently extended to some of the eastern and south-eastern states. At this date there are twelve states that have these short courses well organized and under effective headway or have such procedure under consideration. The majority of these courses thus far established are conducted under the sponsorship of state educational institutions in co-operation with state fire marshals, fire chiefs and firemen's associations, leagues of municipalities, industrial commissions or other closely allied interests.

Fire Service Extension Committee Appointed

Recognizing the importance of increased efficiency in combatting fire as a part of its general fire prevention campaign, the National Fire Waste Council through its parent body, the Chamber of Commerce of the United States, recently appointed a Fire Service Extension Committee to perfect plans for the introduction of short extension courses for firemen, initiated by the several educational institutions and others, in all states. This committee, of which Geo. H. Parker, Manager of the Kentucky Actuarial Bureau, is chairman, has just issued a suggested procedure for organizing, operating and conducting such courses, some twenty copies of which have been forwarded for distribution at this convention. Briefly the plan is to have local committees made up of five to seven outstanding leaders in public welfare movements take full charge and sponsor the work in each state, with the assurance of full co-operation on the part of all trade organiations affiliated with the National Chamber of Commerce. The Fire Service Extension Committee plans to keep in close touch with the developments in the several states, aid in securing the services of experts from various Government departments, insurance organizations and others to assist in the work, help to develop from time to time the best thought with reference to lecture subjects, demonstations, evolutions, methods and practices and otherwise co-operate with each and every state.

New York Starts Zone Schools

At a joint meeting of the New York State Chiefs' Association and the Conference of Mayors and other Municipal officials held at Albany in March of this year, plans were completed for starting fire training schools. The state has been divided into fourteen zones, each with a centrally located city having a drill tower and other necessary facilities for instruction and training. A school for instructors was held at Utica and conducted under the direction of Chief J. N. Sullivan for a week this last April. It was attended by a total of thirty odd picked men sent from each of the fourteen established zone centers. As a representative of the National Board of Fire Underwriters I was in attendance at this school for instructors and delivered six out of ten lectures which were embodied in the adopted programs of instruction.

It has been my privilege to be present at a great many conventions and meetings with firemen's organizations, and I have never seen a greater measure of interest and enthusiasm made manifest than at this Utica school and it is evident from advices just received from the Secretary of the Mayors' Conference that the plan adopted is already bearing fruit. Seven of the zone schools are already in operation and the remainder are to be under way soon. The zone training schools are to be conducted under the direction of the instructors who attended the Utica school and the sessions are arranged so as to give to an estimated total of over two thousand firemen scattered over the entire state, all of the ten lectures and twenty evolutions previously taken up in the school for instructors.

Kansas Finishes First Course

As an indication of how extensive this movement is being entered into, it would be of interest to mention that after being endorsed and approved by the Governor, sponsored by the State University, and supported through Legislative appropriation and the State Firemen's Association, Kansas has just completed its first course. We have been advised on good authority that this was one of the best conducted schools thus far held in the country.

The National Board of Fire Underwriters has contributed liberally in time and expense incurred by its engineers in advancing this movement, believing that it promises to raise

"THE National Fire Waste Council, through its parent body, the Chamber of Commerce of the United States, recently appointed a Fire Service Extension Committee to perfect plans for the introduction of short extension courses for firemen, initiated by the several educational institutions and others, in all states."

the standard of fire fighting and fire prevention to a higher level of efficiency and therefore prove a factor in still further reducing the excessive losses in life and property values that have been experienced in years past.

Abstract of paper read before the New England Fire Chiefs' Association convention at New Haven, Conn.

Fire House Opened in Pittsburgh

Pittsburgh has recently placed in commission, handsome new quarters for Engine Company No. 21 at Walter Avenue and Proctor Way in one of the South Hills residential sections of the city. It replaces an old two-story frame structure erected during 1893.

The new house, which was designed under the supervision of Richard Neff, city architect, and constructed by the Rubenstein Construction Company, is a two-story brick of English half timber type of architecture, of fireproof construction throughout with reinforced concrete foundation and floors, exterior walls of tapestry brick and roof of red tile. The total cost of the building complete, less the furnishings was $34,467.

The first floor is occupied by the apparatus room, a large combination lounging room, kitchen, and toilet room.

The apparatus room is 25 feet 9 inches wide and 35½ feet deep. It is 16 feet high and has a white tile wainscoating, 5 feet high. The apparatus floor is surfaced with red quarry tile.

Seven large windows in addition to the large apparatus doors in the front of the building give an abundance of light and air to the apparatus room, while nine large ceiling lights of the latest design, give a beautiful lighting effect at night.

The hose tower, which is located in the rear center of the apparatus room, is 11 feet square of solid brick construction, built on a concrete foundation and extends through the roof from the basement floor, a distance of 60 feet.

Fire Station No. 21 in Pittsburgh, Pa.

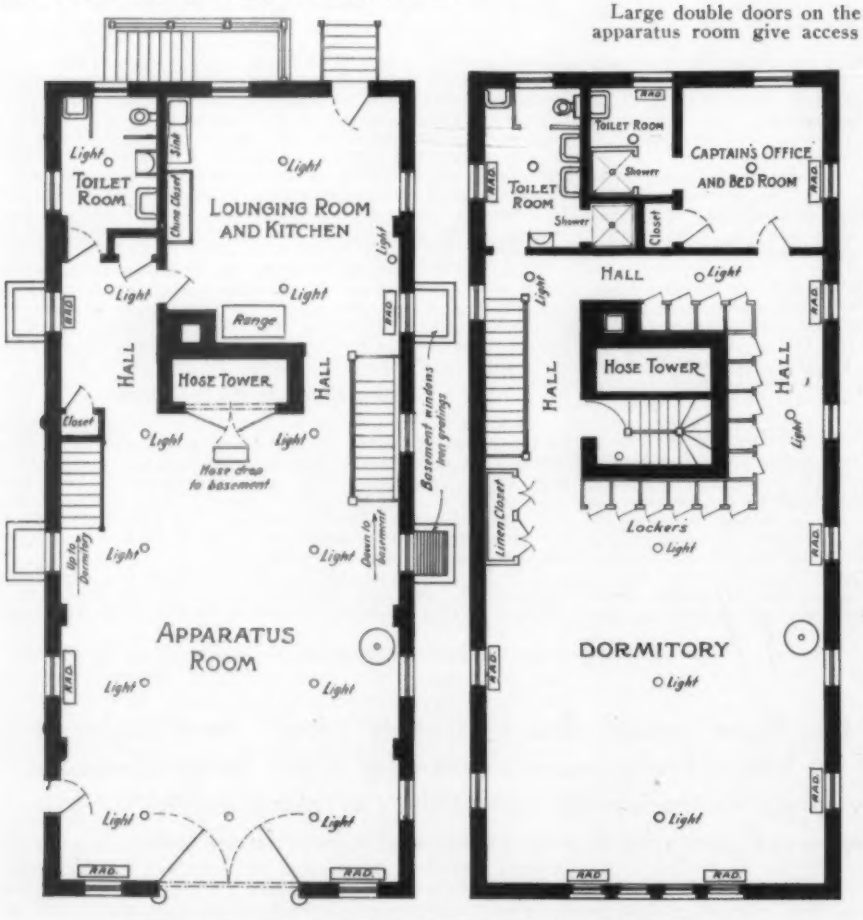
Large double doors on the apparatus room give access to the tower for hoisting and lowering of hose, while a drop hole or trap door in the apparatus room floor between the rear of the fire apparatus and the hose tower is provided for dropping the dirty or wet hose from the apparatus into the basement, where it is washed and then pulled up into the tower to dry.

On either side of the hose tower is a hallway, connecting the combination lounging room and kitchen and the toilet and wash room in the rear of the building.

The lounging room and kitchen is 18 feet 10 inches long and 17 feet 8 inches wide with composition floor. It is equipped with a fine gas range, white enameled sink and china closet and cupboard, while the toilet and wash room is 12 feet long and 7 feet 4 inches wide, finished in tile and marble and contains a wash stand, slop sink, urinal and toilet.

The dormitory, located in the front of the second floor, is 25 feet 9 inches wide and 28½ feet in depth to the front of the large and roomy lockers for the men, fifteen of which are built around three sides of the hose tower.

On either side and in the rear of the hose tower, hallways connect with and separate the dormitory from the captain's office and bed room, and the toilet and wash room for the men, located in the rear of the second floor.



First and Second Floor Plan of Pittsburgh Fire Station No. 21

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THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

CITIES with large fire departments are called upon to furnish fire protection to rural areas and to neighboring municipalities at times when additional help is needed. Large cities can not expect help from the rural areas or from the villages so that the service is really one-sided. That is why so much consideration is given to working up a scale of payment for calls outside the city limits.

An interesting interpretation has been presented concerning protection to factories located outside of city limits. Factories help the growth of a city. The employees of such plants will always trade in the larger communities. Therefore, even though such industrial centers do not support fire departments in neighboring cities, the municipality feels incumbent to give the protection asked for, as a safeguard for its commercial prosperity.

There are many more sidelights on the question which is printed in full in the box on this page. In the box on the following page is the problem that will be discussed in the next issue. Should you have some comments that you would like to make on the next question or if you have a problem that you would like to see treated in this department, write to the "Round Table Editor," FIRE ENGINEERING, 225 W. 34th St., New York, N. Y. There is no charge for this service.

Here Is the Problem

Do you respond to fire calls from rural or neighboring communities?

What charges, if any, do you make for answering such calls?

The Question

There does not appear to be a large faction that favors either free or paid service for outside calls. The replies received follow:

A. McC. Marsh, Chief, Columbia, S. C.: We have had quite a bit of experience in our city with regard to answering calls in neighboring communities. We are called to such fires about fifteen times a year.

We do not feel that we lose anything by fighting these fires. Only one piece of apparatus, equipped with chemicals, and one engine company consisting of five men, is sent in response to an alarm of this sort. This piece of apparatus is sent from headquarters where three other companies are housed. In this way, only one company from this particular station is missing in the event of a fire occurring in the city.

A charge of one hundred dollars is made for calls in the residential sections outside the city. We are able to collect this money in very few cases. Plainly speaking, the charge is made to keep down unnecessary calls from outlying districts.

When a fire occurs on the outskirts, the party sending in the alarm is always questioned as to the nature of the fire before we send out a truck. However, if the call comes from one of the manufacturing plants located outside of the city limits, we immediately send them whatever apparatus is necessary to extinguish the fire.

All of our manufacturing plants are required to use National Standard threads on their fire equipment. We have never had any trouble in geeting cooperation from them along this line.

No charge is made for responding to calls from any of these factories. The employees of these plants spend their money in our city, and the industries themselves help to boost the city. We therefore feel we owe them this protection.

In the case of neighboring communities who have fire protection, but who perhaps might need additional apparatus, we always render assistance to them when necessary and make no charge for such calls.

C. E. Carlson, Chief, Tacoma, Wash.: We respond to calls from neighboring communities needing help, except where it is a brush or grass fire.

Up to the present time no charge has been made for these calls. However, this is an expense to the department in that these runs are long and are hard on the apparatus. No satisfactory method has been found as yet to reimburse the fire department for outside runs. It is impossible to try and collect any sum of money from the person whose house is on fire. I believe the city should pass an ordinance to keep the fire department within the city limits. It would then be up to the county commissioners to provide some protection to rural communities. Apparatus would also have to be provided or else some arrangement could be made with the city whereby the department would be compensated for making these runs.

Just as long as the city continues to send out fire apparatus no action will be taken to provide protection for rural communities. To my mind the present system does not seem fair to the city taxpayers.

D. M. Hudson, Chief, Chelsea, Mass.: Chelsea is ready to respond to calls for assistance whether the calls come from some rural district or from metropolitan centers. There are no rural communities near this city that are without fire protection and therefore we are only called upon to assist at very serious fires.

Our immediate neighboring cities, Everett and Revere, work with us in a mutual aid system, and assignments are made governing responses.

Although this city is connected with the Boston fire alarm system and receive their boxes in two stations, we always await a telephone call before responding to multiple alarms in that city. However, we have received valuable assistance from the Boston Fire Department by using the fire alarm box at headquarters.

S. B. Lent, Chief, Bremerton, Wash.: We respond to all fire calls within five hundred feet of the city in order to protect our property. No charge is made for this service. If a fire occurs outside of the five hundred feet limit, and several homes are involved, we send a combination hose and chemical truck and two of our men. Upon arriving at the fire we call for volunteers and put them to work.

As these communities grow and it becomes impossible for us to give them first class assistance, we receive requests for annexations. In the past five or six years, we have received three petition from outside districts for annexation. These were brought before the people and were accepted.

Fire protection in rural districts has always been a problem with fire departments, for each incoming mayor

has different ideas on the subject. Personally, I believe that rural districts should not receive the service of the fire department without reimbursing the city for such service.

John T. Hollis, Asst. Chief, Cushman-Hollis Co., Boston, Mass.: We do respond to calls in neighboring communities if we are called upon to do so by the chief of the department needing assistance.

We have two classes of calls. The first is wood fires. For wood fires we pay our men seventy-five cents an hour. When responding to such a call in a neighboring community, we send the bill to the town which has asked for the assistance. The men receive the money personally. For straight alarms, as for a building fire, there is no charge. We have a friendly agreement with Hull, Weymouth and Rockland which are surrounding towns, to the effect that we are very glad to give what services are in our power, for any conflagration which is beyond them. In turn they are glad to reciprocate with us, if necessary.

Olander Lind, Chief, Kansas City, Kans.: In responding to rural district or neighboring town alarms, it depends mostly upon the district and the locality from which the alarm is received. As a general rule we send one company in response to such alarms. However, in cases like a small community, or a valuable residential district as we have here in our rural districts, we send more companies.

No charge is made for answering such calls.

Geo. Ackley, Chief, Gainesville, Texas: The answering of fire calls from rural districts is left entirely up to the chief. He has the right to send out any apparatus which he deems advisable. However, we usually send only a chemical truck as water in any quantity is not available as a rule. All that we try to do at such fires is to confine the fire to as few buildings as possible. Lots of work is done by the men to accomplish this, such as breaking down fences and in some instances even wrecking small buildings, such as garages and wagon sheds. In this way the fire is prevented from spreading. Bucket brigades under good management are very effective and have been the means of saving a great deal of property.

We make no charge for this service. However, donations are always thankfully received.

Richard Timmins, Chief, Beaver Falls, Pa.: We answer calls from rural and neighboring communities whenever we can be of any assistance. We make no charge aside from the volunteers who may participate. Personally I look at this more from a humanitarian standpoint. Not all people live in rural districts from choice. Many are there because of necessity and in many cases everything they have in the world is their home. I am always glad to lend a helping hand whenever possible without any thought of remuneration.

G. D. Lovejoy, Chief, Waterville, Me.: We answer all calls from our own rural districts and also from neighboring communities. In answering such calls, we send one piece of apparatus, a seven hundred and fifty gallon pumper with a hundred gallon booster tank. We carry three lengths of suction hose. In this way if we find no water near the fire we can still do quite effective work.

In responding to calls from towns and cities where they have pumpers, no charge is made for the service as they are always willing to reciprocate. However, where communities have no apparatus we charge fifty dollars an hour for the pumper and eighty cents an hour, regular pay, for the call men.

Geo. Haggerty, Chief, Berkeley, Cal.: In Berkeley we have several rural districts laying just north of us. The city of Oakland is directly south of our city. We respond to calls that come from any community. I feel this is the only practice to follow as Oakland, for instance, responds most generously when we are in need of assistance. We have a direct telephone connection with Oakland and this is of material benefit when we receive a call intended for them and vice versa.

Here Is the Problem for the Next Issue

What color are your fire hydrants painted?

Are the hydrants marked in any way to determine the size of main to which they are attached, or to determine whether or not a good fire stream can be secured from them?

At fires, how do you determine which hydrants should be avoided, and which should be used?

We do not charge anything for responding to these calls. It is a courtesy pure and simple.

Howard Stout, Chief, Bluffton, Ind.: We answer all calls from farms and surrounding towns. A charge of twenty-five dollars is made for the first mile and ten dollars for each additional mile. When arriving at the fire we charge ten dollars an hour for pumping and laying of large hose. When we use chemicals, we just require the actual cost of the recharging.

J. W. Miles, Chief, Crowley, La.: We respond to calls outside of the city up to the distance of twenty miles. However, in many instances I do not think this practice is good policy. Usually when arriving at the fire we find there is no water available and the building or buildings are too far gone for us to be of any assistance. However, we never refuse to respond to such calls.

No charge is made for rendering this service. However, the person or town asking for assistance is made to understand that donations will gladly be received. In this way we receive many substantial donations.

My personal opinion is that there should be a mileage charge for responding to such calls as there is always a certain amount of wear on the apparatus.

B. J. Houston, Chief, Cincinnati, Ohio: We respond to calls from all incorporated villages or towns or rural districts that have water supply, provided we have a contract for fire service outside the city limits on file at the fire tower. That is, if it is an incorporated town or village the contract must be signed by the mayor. If rural districts, the contract must be signed by the township trustees. This contract provides that a charge of seventy-five dollars an hour be made for the use of any engine, hose wagon, ladder wagon, or other piece of fire department apparatus, and twenty-five dollars for the services of a supervising fire marshal. We do not make contracts with individuals.

Thomas Almond, Chief, Central Falls, R. I.: We answer calls from rural and neighboring communities if it is at all possible. However, we never send more than half of our apparatus as we only have a small department.

No charge is made for calls of this kind because when we ourselves have to call for help it is always given freely.

Geo. W. Bassford, Ex-Chief, Harrisonburg, Va.: We have responded to seventeen calls this year outside of the city limits. No charge is made for this service and we receive very little compensation for our efforts. The upkeep of the apparatus has been three times as much responding to rural calls as those in the city. The average runs have been fourteen miles.

Chas. Smalenberger, Chief, Meadville, Pa.: Yes, we respond to fire calls from rural communities. We charge fifty dollars for the first hour and twenty-five dollars for every hour thereafter. We hold the party who makes the call responsible for payment of this sum. Summer resorts around here have a standing account in our bank for us to draw on when we have to answer a fire call for them. We do not like to answer these calls and take the apparatus out of the city, but it is hard to refuse them in time of need.

J. H. Holmes, Chief, Milton, Mass.: This department has a mutual aid system with the city of Boston. We have responded to calls from the city of Quincy, the town of Randolph, and the town of Canton. Outside of the calls to the city of Boston, the calls for aid are few and far between.

No charge has ever been made for rendering assistance. We are glad to help all we can when we are needed.

W. J. Krzyzostan, Chief, Hamtramck, Mich.: We have responded to fire calls from the city of Highland Park. No charge has ever been made for this kind of service. We consider it purely a matter of cooperation.

Fred. L. Knight, Chief, No. Tonawanda, N. Y.: This city responds to fire calls in outlying districts. However, those desiring assistance must sign an agreement to pay

(*Continued on page* 741)

WITH THE EDITOR

Burning Up the California Forests

The heavy fire losses in the forests of California within the past two months have proved an object lesson as to the necessity for the authorities of that state having the woodlands in their charge to take drastic action. To be sure, the buildings built by man can be replaced, but the destruction of the redwood trees, especially those of older growth, is practically irreparable. Such forests take several generations to raise, and when fire denudes the land of its covering and destroys the young seedlings, as well as the larger trees, erosion completes the devastating work.

To replace the redwoods, manzanita, live oaks and other growths, burned in the various conflagrations will be an expensive and tedious operation. Fire prevention would avoid such useless and wasteful extravagance, but, of course, the problem confronting the state, and all of those which have extensive forest lands to protect, is the enforcement of the laws. California has been a leader in legislation looking to the punishment of offenders who cause fires. It is unlawful in that state, and in several others, to throw lighted articles, such as cigars, cigarettes or matches, from an automobile. The starting of fires and the extinguishment of them after use, is also regulated by law. But with the extent and inaccessibility of forest lands, it is not always possible to properly police them so as to catch the culprits in their acts of carelessness and vandalism.

Naturally, the dry season, when practically no rain falls and the forests are in so dry a condition that fire will spread with immense rapidity, is the time when the greatest vigilance is needed to protect the woodlands from forest and brush fires. It would seem that any expense, involved in the protection of these most valuable possessions of the states and the nation, is justified, and no hesitation should exist to provide such protection at any cost.

The Dust Hazard and the Chief

As is well known to most Chiefs of Fire Departments dust mixed with oxygen—that is to say, floating in the air—is a most potential hazard, and every precaution should be urged upon those establishments whose processes result in the formation or throwing off of minute particles which float in the atmosphere in the form of light dust.

It matters little what the material is—it may be flour, sawdust, coal, metal, or many other substances. The fact remains that, with contact of fire or spark, there is liable to ensue a disastrous explosion, which very often results in loss of life as well as great property damage.

Only the other day a serious explosion occurred from this cause in an aluminum powdering plant at Logan's Ferry, Pa., in which at least seven men were killed. In this instance the substance known commercially as "bronze powder" was being manufactured, and the ignition of the minute particles of aluminum suspended in the air caused the blast.

There is usually in such explosion the human element as a contributory cause. That is to say, carelessness of some individual, lack of proper precautions, or ignorance of what should be done to avoid the possibility of such a disaster, will be found upon investigation. There is little excuse for either ignorance or carelessness in the handling of such processes, as through the study of experts, such as David J. Price, of the United States Department of Agriculture, the causes of dust explosions have been thoroughly analyzed.

Chiefs of fire departments having establishments in their jurisdiction in which the hazard of dust explosions exists, would do well to acquaint the heads of such businesses with the risk that is run if the proper precautions are not taken, and if a dangerous situation exists, refer them to the dust explosion experts of the Department of Agriculture for information as to the best method of handling such a condition. By doing so the Chief will not only avoid a possible disaster, but will also make friends of the manufacturers, when they are made to realize the danger from which he has saved them.

Benefit of Fire Drills in Institutions

A practical illustration of the advantages of thorough grounding in the matter of fire drills in the case of inmates of public institutions was given recently when a fire occurred in the House of Refuge on Randall's Island, New York City. A fire in this ancient building—it was erected in 1854—is at best a serious matter, and in this case it originated in one of three wooden cupolas surmounting the structure. There are some 490 youths confined in the institution, and they very wisely have been well drilled in their duties in case of just such an emergency as occurred.

At the first wisp of smoke rising from the central cupola, a guard turned in an alarm which blew a siren and summoned the boys, at work in various parts of the island, to their assigned posts. Under the leadership of the guards, they were lead to points

of vantage to fight the fire. One squad climbed a narrow stairway, connected a hose line to a recently installed high pressure connection, and fought the fire from the roof of the building. The cupola rose two stories above this point.

It took only about twenty minutes to bring the fire under control, and by the time the city department had arrived in force upon a ferryboat, the blaze was out. The only damage was the destruction of the cupola and the flooding with water of the superintendent's quarters at the top of the building.

The prompt action of the guard in sending in the alarm and the excellent discipline with which the fighting of the fire was carried out undoubtedly saved the building from destruction. The incident, small in itself, shows the importance of careful and painstaking instruction in the fire drill in such institutions. While fortunately the number is growing less year by year, still many of the buildings of public institutions are ancient fire traps, and a blaze, however insignificant, in one of these is a mighty serious affair, which requires prompt and efficient handling to avoid the risk of a catastrophe. This is especially true if the fire should be at night, when the occupants are asleep. Quick and cool action is needed, and the steadiness imparted by frequent fire drills will be of immense help at such a time of stress and excitement.

CHIEF DOUGHERTY GIVES ADVICE TO YOUNG N. Y. F. D. OFFICERS

Twenty New Captains and 48 New Lieutenants Appointed—Pays Tribute to Commissioner J. J. Dorman—Advises Aggressiveness

AN unprecedented number of promotions in the Fire Department today signalized the departure on vacation of Chief John Kenlon, who instituted an innovation by ordering Assistant Chief Thomas F. Dougherty and Assistant Chief Joseph Martin to alternate every twenty-four hours in charge of the department during his absence until September 3.

Raymond L. George was appointed deputy chief and Timothy G. Guinee, James Hubridy and James F. Fitzgerald were promoted to chiefs of battalion. In addition, twenty new captains and forty-eight new lieutenants were named in the order, which was approved by Fire Commissioner John J. Dorman.

After Commissioner Dorman had addressed the new officers, congratulating them on their promotion and asking them to give him the co-operation for which the public pays, Chief Dougherty was called upon for an address and electrified his audience by telling them that "any man who lacks interest in his work, so far as the fire department is concerned, is not worth the powder to blow him to hell."

Pays Dorman Tribute

Excerpts from his talk follow:

"Commissioner Dorman has asked for your co-operation. I don't know of any reason why you shouldn't give it. No commissioner in my time has ever had the department and its personnel more at heart than he has. He has not alone been interested in seeing the best done by you that he could, but he has taken a real grasp of the situation, has diligently worked for new companies where they are needed in the outlying sections of the city; has secured new apparatus wherever that tends to facilitate your work in fighting fires and has just gotten forty-nine new hose wagons which are very essential in the efficient fighting of fires.

"To Chief George, who has just been made deputy chief of the department, I would say that his responsibility has greatly increased. Instead of being responsible for seven or eight units of the department, he will now face the possibility of being responsible for as many as forty or fifty, and I haven't any doubt he can and will look after them well.

"To you new chiefs of battalions I would say that you have new and greater responsibilities. Where you had one unit to look after you may now on occasions have ten or twelve. Each of those units has been and is a big cost to the public. There isn't any reason why you shouldn't provide the highest kind of efficiency in the way you handle them. Don't follow old methods if you know new ones that are better.

Don't Stand Waiting

"Take the initiative and don't stand around waiting for some superior officer to come along and tell you what to do or how to do it. Study your equipment, keep it in the best of condition always. Study your men. Study the buildings in your district. Know their construction. See that the men under your command do the duty that is expected of them and for which they are paid. You can get the best out of them and you should. It is not necessary to give any idea of hounding any of them.

"I say the same to you captains; see that your equipment is in condition always. See that it is properly oiled; that the oil is changed when it should be and that the apparatus is always in the best possible condition.

"You ought to be down on the apparatus floor when that is done. You ought to see that it is done properly. You won't get things done properly if you are up on the sofa. Insist on your men doing their work properly. Any man who lacks interest in his job, so far as the fire department is concerned, is not worth the powder to blow him to hell.

"Keep out of speakeasies! Keep away from money lenders and your path will be rosy."

Connolly Gets Promotion

In the list of twenty lieutenants promoted to captain was P. Joseph Connolly, who was in charge of Engine House 29 the night of December 31 last when Norman Hales, the actor, fell to his death at the house.

Connolly, who stood at the top of the list for promotion to captain at the time, was passed over a number of times. He was fined thirty days' pay and sent to a fire house in Tottenville, Staten Island. His promotion at this time, it was said, was well earned after "doing the toughest bit" any man has been given in the department in years.

Other orders issued today included the transfer of Deputy Chief Elmer Mustard from the first division to the fourth division, to fill the post left vacant by the death of Deputy Chief William Clark; of Deputy Chief Frank Murphy from the eighth division to the first division and of Battalion Chief Henry G. J. Winter from the fourth battalion to the twelfth battalion.

Twenty-seven probationary firemen also were appointed.

Aviation Adds New Danger to Forest Conservation

Each modern improvement has its advantage and drawbacks. Airplanes have been used by forest rangers in fighting forest fires, but when an airplane caught on fire in the air was abandoned by the pilot who jumped to safety, the plane crashed in some brush near Hammonton, N. J. Very little was left to the plane after the fire and souvenir hunters claimed the craft.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified.

Some Promotional Questions

To the Editor:

Will you please answer the following questions in an early issue of FIRE ENGINEERING?

T. E. N.

Question 3. What engine pressure is required to get 50 lbs. pressure, 1½-inch nozzle, 400 feet of 2½-inch hose.

Answer 3. A 1½-inch nozzle at 50 pounds nozzle pressure will discharge approximately 475 gallons per minute. The friction loss in 2½-inch hose carrying 475 gallons per minute amounts to 50 pounds per 100 feet. For a line of 400 feet, the friction loss would total four times the 50 pounds, or 200 pounds. The pressure required at the engine must be sufficient to overcome the 200 pounds friction loss as well as give 50 pounds pressure at the nozzle. Engine pressure, therefore, is equal to the sum of 200 and 50, or 250 pounds.

Question 4 (a) How would you proceed to ventilate a five story department store fully charged with smoke?

(b) State what precautions you would take.

Answer 4. No mention is made of the fire, but it is assumed that the fire is burning in some part of the building and that the smoke has worked up the shafts, stairwells, or other means to permeate the atmosphere on all floors. It is also assumed that some employees and customers are still in building.

Proceed as follows: Determine the location of fire. Open up skylight above stairs or elevator nearest to fire. Open up all windows on floors below fire, but do not open windows on fire floor, particularly if there is a heavy wind. Do not open windows on floors above fire, unless the atmosphere is so dense that there is danger of people becoming overcome.

The sole object in ventilating as described above is to confine the fire along a definite path toward roof, keep it from spreading on any floor, and at the same time clear the air so that the department will have no difficulty in following the fire up; also to protect any occupants in building.

In the above it is assumed that the depatrment store is a typical one and provided with several stairs and elevators located at different points which may be used by employees and customers in escaping, and that by directing the fire up one particular stairwell, or set of elevator shafts, these people will not be cut off.

Precautions would include: Do not so ventilate as to draw fire up stairways necessary for the safe egress of those within the building. Provide ventilation so as to confine the fire to one section of the building, and not permit it to spread through floors above; do not permit men of the company to congest stairways or halls or obstruct stairways by laying in lines to cover fire incidental to ventilation.

Question 5. Combustible matter is found in a great variety of forms. Water is not an efficient medium for extingushing fire in some of these forms.

(a) Name five such forms of matter.

(b) State the substitute for water that you would use in each case.

Answer 5. Powdered aluminum; calcium carbide; lacquer; electric arc fires (copper, etc.); petroleum; shellac.

Powdered aluminum fires are extinguished with dry sand.

Calcium carbide fires extinguished with carbon tetrachloride.

Lacquer fires extinguished with foam, CTC, or carbon dioxide.

Electric fires extinguished with CTC

Petroleum fires extinguished with foam extinguishers or carbon dioxide.

Shellac fires extinguished with CTC, foam extinguishers, or carbon dioxide.

Question 6. A bad fire occurs in an office building, eleven stories high, of modern construction. The fourth, fifth, sixth and seventh floors are completely destroyed. You are detailed to take charge of a company and overhaul the contents of the burned floors. State exactly how you would proceed, what dangers are to be guarded against, what precautions you would exercise.

Answer 6. The fact that 4th, 5th, 6th and 7th floors have been completely involved in a building of modern construction would indicate a high intensity of fire. Building members (girders, columns, walls) would be very much weakened; plaster and concrete would be damaged to such an extent that it might fall in large pieces should it be disturbed; water on burned floors would add weight which might be dangerous in their weakened condition.

First make a thorough survey of the damaged floors, particularly noting the location of heavy safes and conditions of floors and columns beneath them. In making survey, start at the top floor and work down.

After survey has been completed and floors appear safe, start draining water off, beginning at the 4th floor and working upward. If this work were started on the 7th floor, the weight of the water from the upper floors would be added to that on the lower floors, and might thereby endanger the lower floors.

In cutting holes in floors to permit water to drain out, keep near partitions, and cut through flooring midway between beams. Center of span between beams of a floor can be gauged approximately by noting the position of the beams on the ceiling above. Floor and ceiling beams line up.

In clearing away debris and making sure that all fire is out, move materials toward walls rather than toward center of floors. There is less strain on the floor beams when they are loaded at the ends rather than in the center.

Make a clear space on the floor in starting, and go over all materials, shifting as above noted.

Question 7. (a) What precautions would you take to prevent accident to men and apparatus and public while responding and returning from fires?

(b) In what distance can a six ton motor apparatus going at a speed of twenty-six miles per hour be brought to a dead stop?

Answer 7. (a) When responding to an alarm of fire, get apparatus to the scene with the least possible delay; in so doing, keep same under control. In turning corners, passing through crowded streets or where traffic is heavy, cause the apparatus to be slowed down to a speed consistent with safety until any danger of collision or accident has passed, when the former speed may be resumed.

Particular care must be observed when crossing railroad tracks, crowded or slippery streets, or through business districts. Furthermore, signalling devices should be sounded as required en route to fire.

Particular care must be observed at all times to avoid collision with other vehicles, particularly private cars. Due to the predominance of closed cars now on streets, the drivers thereof have little onportunity to hear the fire truck sirens, bells, or whistles until the apparatus is comparatively close at hand. Eternal vigilance is necessary on the part of the driver to prevent accidents.

(b) This question depends upon the apparatus, the type of brakes, and the condition of brakes employed.

The usual specifications for motor fire apparatus state that the emergency brake shall hold the truck at rest on an incline of 15°. If the truck weighs 6000 pounds, under these conditions, the emergency brakes alone would be capable of stopping the truck within a distance of 30 feet when traveling at twenty-six miles per hour. If both foot brakes and emergency brakes are employed, and if there is no skidding, the truck should be brought safely to a stop in 25 feet. These figures, however, are subject

to checking up by local fire department tests. In other words, the figures as presented are based upon specifications for the apparatus and not upon actual test.

Conductivity of Fire Streams, Etc.

To the Editor:

I would appreciate very much if you will answer the following questions for me.

We had a fire recently on a telephone pole which was carrying about 2,500 volts. There was a shed of wooden construction beneath the wires and adjacent to the pole, the top of the shed being about two or three feet from the high tension wires.

A man was ordered on the roof of the shed with a small stream to put the fire out, which was burning all about the high voltage wires. In order to properly direct a stream on the fire the hands of the firemen were within a foot of the wires.

"A" claims that the man was not safe with so small a stream at that distance; and also claims that a carbon tetrachloride extinguisher should have been used, and that the department should have one or more of them in their equipment.

"B" claims the man was safe, that electricity will not follow any stream in motion, no matter how small or short.

Question 1. Which of the above is correct, "A" or "B"?

Question 2. Do you believe a department of 27 paid men should have an assistant chief? Do you think it would be more advantageous to the department to have one of the older captains appointed to this position, under whose direction should inspection work be carried out; or, do you think it would be better to take one of the men from the ranks who has been on inspection duty and who has had but little actual fire fighting experience?

I believe that if the assistant chief could arrange to take the men beneath him on inspection tours, knowledge so gained would be of considerable assistance in case of fire.

Thanking you in advance, I am, very truly,

H. R.

Answer 1. With reference to the use of a water stream on 2500 volt wires, "A" is correct. Beyond 12 feet range there would not be much danger if the water were pure. On the other hand, if the water contained minerals, salts, or other materials which would tend to increase its conductivity, there might be severe danger even at much greater distances. It is safe practice not to approach charged electrical apparatus commonly found within buildings nearer than 20 feet with small fire streams. Larger fire streams would make a greater distance necessary.

The use of carbon tetrachloride is perfectly safe on high tension apparatus, as carbon tetrachloride is not a conductor.

Whether or not the stream is in motion makes very little difference in its conductivity, as long as it is solid. Electricity travels along a moving stream of water just as rapidly as it does along a column of water at rest, provided conditions are similiar—same diameter of stream, same solidity, same water, etc.

Answer 2. A paid department of 27 men should certainly have an assistant chief. It would be far better to appoint the assistant chief from among the present officers of the company, and tie-up the inspection work by having officers or men under his command do this work. One of the biggest advantages of inspection work is that it gives the members of the department a knowledge of the interior of buildings which is invaluable to them in the event of handling fires which may occur therein.

In most large cities the members of the uniformed fire fighting force do all the inspection work. In some cities the information they secure on inspection is turned over to the various fire companies and use made of it in this manner. In some of the districts of the New York Fire Department inspectors report to the district chief, who, when he finds anything unusual, has the men called together and explains it to them. By this means any unusual hazards are made common knowledge to the members of the department who will possibly, at a later date, have occasion to operate around them when fire occurs.

Engine Pressure for Standpipe Layout

To the Editor:

Will you please answer the following question:

Standpipe 100 feet high, 6 inches in diameter. Connect 100 feet of 2½-inch hose, 1¼-inch tip, at 50-foot elevation. Two 100-foot lines of 3-inch hose are stretched from engine to standpipe; 35 pounds is wanted at the nozzle. What is the engine pressure?

When working this problem would it not be necessary to allow 100 feet elevation (head) in solving back pressure instead of the usual 50 feet?

J. F. A.

Answer. The method of solving this problem is as follows:

The engine must give sufficient pressure to overcome friction in the hose lines, overcome friction in the standpipe, overcome back-pressure in standpipe and deliver 35 pounds at the nozzle.

The Underwriters' formula for calculating engine pressure takes care of friction loss in hose and nozzle pressure, assuming the layout is placed horizontally. It does not take into account friction in standpipe, nor back-pressure. The latter two items must be considered separately.

First solve the hose layout part of the problem and determine what pressure will be necessary at the engine to overcome the friction in the two parallel lines of 3-inch hose siamesed into the 100 feet of 2½-inch hose, equipped with 1¼-inch nozzle at 35 pounds pressure.

Reduce the layout to a single line of 2½-inch hose.

The factor for reducing two parallel lines of 3-inch hose to a single line of 2½-inch hose is 9.35. $100 \div 9.35 = 10.7$ feet of 2½-inch hose.

Add to this the 100-feet of 2½-inch hose and we have 110.7 feet of 2½-inch hose.

Engine pressure = N. P. $\times$ (1.1 + KL).

In the above K, for 2½-inch hose and 1¼-inch nozzle, is .248 L, which is the number of 50-foot lengths in the line of hose, is $110.7 \div 50 = 2.214$.

Then E. P. $= 35 \times (1.1 + .248 \times 2.214)$
$= 35 \times (1.1 + .549)$
$= 35 \times 1.649$
$= 57.7$ pounds.

This is the pressure necessary at the engine to overcome the friction in the hose and give 35 pounds at the nozzle.

To this must be added the back pressure and the friction in the standpipe system. The nozzle is approximately 50 feet above the street, and the back pressure will therefore be $50 \times .434$ or 21.7 pounds.

Friction loss in standpipe system is usually taken at 25 pounds.

Then the corrected engine pressure $= 57.7 + 21.7 + 25$ or 104.4 pounds.

With reference to your second question relative to using 100-foot elevation rather than 50 feet when calculating back pressure, the 50-foot elevation is used. We will have with the layout as given more than 35 pounds at the standpipe outlet at the 50-foot elevation. The pressure at this point will be equal to 35 pounds plus friction loss in the 100-foot line of 2½-inch hose.

The back pressure created at this point by the 50-foot elevation of water above would be 21.7 pounds.

You will appreciate that this back pressure will in no manner affect the nozzle pressure because the pressure as furnished by the engine at the 50-foot elevation on the standpipe is greater than the back pressure created by the water above it. Hence, the 50-foot elevation would be considered in determining back pressure, rather than the 100-foot elevation.

Apparatus Delivered to Story City, Ia.—A 300-gallon pumper has been delivered to Story City, Ia.

Springfield, O., Awaits Ladder Truck—A ladder truck, equipped with a booster pump, is to be delivered to Springfield, Ohio. It was purchased for $9,000.

Chief Paine of Spokane, Wash., in Collision—Assistant Chief William Paine was injured when his car on the way to a fire had a head-on collision with a private auto.

Milwaukee Firemen Under Compensation Act—Chief Peter Steinkellner of Milwaukee, Wis., reported that all members of the fire department are now under the workmen's compensation act.

TWO KILLED IN BLAST THAT DESTROYS MACARONI PLANT

Three Fire Alarms Turned In—Factory in Heart of Brooklyn's Industrial District —Blast Caused by Three Boiler Explosions

TWO men were killed, eighteen workers critically injured, and the first floor of the building containing the macaroni plant of A. Zerega's Sons, wrecked when three boilers in the basement exploded simultaneously.

The factory is located in the heart of Brooklyn's industrial section, surrounded by a number of tenement houses. The explosion created wild disorder and police reserves were called to hold back the crowd, estimated at three thousand persons.

A Compressor, a Recently Installed Labor Saving Device, Caused an Explosion That Wrecked a Macaroni Factory.

Firemen pumped great quantities of water into the building to extinguish the resulting fire. After several hours work, the rescue workers found the badly mangled bodies of two employees.

The plant employed two hundred workers who commenced their duties at 7 a. m. They were startled by the explosion in the basement at 7:10. It was caused by the shattering of the main furnace, the hot water boiler and the hot air compressor. The metal of the machines tore through the beams, and every window in the plant was torn from its frame.

Black smoke rolled up through the building. Flames were fed by bags, lumber and ingredients that go to make macaroni. The alarms brought Fire Marshal Brophy and Fire Commissioner John J. Dorman.

A narrow hallway formed the only means of egress from the wrecked building. The employees, mostly Italians, trampled each other as they tried to rush through the smoke, only to find their way blocked by fire. It is believed that there was criminal negligence in operating the hot air compressor, and an investigation will be started.

Miner Theatre Destroyed by Firebugs

The famous Miner Theatre that figured so prominently in the social life of New York City, many years ago when the Bowery was the theatrical center, is now no more. The two owners of the theatre and the building superintendent have been held on the charge of arson, after persistent questioning by Fire Marshal Thomas P. Brophy.

The building next to the theatre was also owned by the same two men. In this structure was found wax tape trailers imbedded in the moulding and wood work. It is believed they had planned to burn this building at the same time that the theatre was destroyed. Luckily, a break in the tape, revealed the plot.

Several suspicious circumstances confirmed the theory that the fire was due to firebugs. Previous to the fire, workmen were redecorating and rebuilding the old theatre so that it could be used for an Italian vaudeville theatre. A week before the fire, several laborers were laid off and then work on the theatre ceased. It was learned from the workmen that three five-gallon cans of gasoline were stored under the stage and then disappeared.

In the adjoining building the fire marshal found from two to three thousand waxed papers such as the barbers use in singeing hair, strung together so as to form a continuous tape. Branch lines led to the various rooms. Holes had been made in the walls, ceilings, and stairs to insure a good draft, and the holes were then stuffed with gasoline soaked papers.

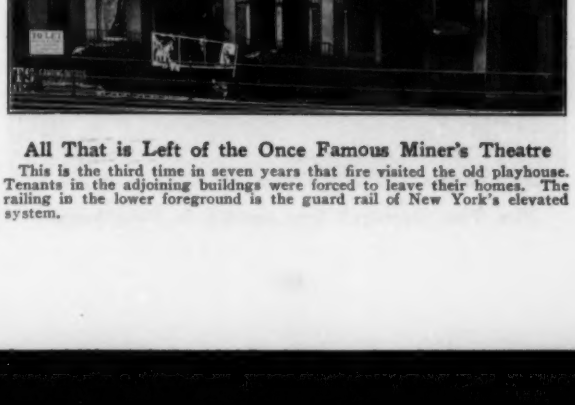
The theatre was rebuilt after it was damaged by fire seven years ago. At the time of the new blaze, the old show house was completely rebuilt with the exception of the bar that was located, in the old days, under the stage.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands.

Week Ending August 9

NEW CASTLE, WASH.—Property of Pacific Coast Coal Co.	80
COSMOPOLIS, WASH.—Seventeen frame bldgs. destroyed	150
ATLANTIC CITY, N. J.—Hoffamn Hotel damaged	25
ROCKAWAY BEACH, N. Y.—Montauk Hotel, Beach 103rd St.	25
MINNEAPOLIS, MINN.—Yards of G. M. Stewart Lumber Co.	40
LANCASTER, TEX.—F. M. Hammond Co. store	50
PARK RAPIDS, MINN.—Property loss value	25
WASHINGTON, GA.—M. P. Flanders store, adj. property	50
SYRACUSE, N. Y.—Barn owned by David Eteinberg	25
RUSHVILLE, IND.—Bldg. Milroy Milling Co., 7 mi. so.-west	125
TACOMA, WASH.—Eleventh Street bridge destroyed	40
CHARLESTOWN, MASS.—Plant of North Shore Fibre Co.	40
KAULTON, ALA.—Yards of Kaul Lumber Co.	40
BANTAM, CONN.—Ice plant of Southern N. E. Ice Co.	200
LENOX, MASS.—Property on estate of John Shepard	300
RED GRANITE, WIS.—Berray Hotel, adj. property	25
ST. HELENS, ORE.—Irwin mill, wharf, McCormick shipyards	80
McADOO, TEX.—Three business houses destroyed	25
QUINLAN, TEX.—Eight business houses destroyed	65
BUFFALO, N. Y.—Plant of Webster Citizens Ice Co.	25
TOLEDO, OHIO—Plant of Hixon-Peterson Lumber Co.	65
OMAHA, NEBR.—Orpheum Theatre damaged	80
CHICAGO, ILL.—Staver Auto Service Co., bldg.	40
CHICAGO HEIGHTS, ILL.—McKinley School destroyed	150
PENSACOLA, FLA.—Plant of Harvey Lumber Co.	40
SELLECK, WASH.—Loading docks of Pacific Lumber Co.	150
ST. LOUIS, MO.—Rickensohl Bros. Co., factory	40
DELAWARE WATER GAP., PA.—Water Gap Manor Hotel	40
DALLAS, Tex.—Bldg. of Dallas Lumber Co.	80
BUTLER, MO.—Plant of Home Produce Co., destroyed	50
OLEAN, N. Y.—Property of Acme Glass Co.	200
WOONSOCKET, R. I.—Lefrancois Transfer & Teaming Co.	40
HOUSTON, TEX.—Plant of Magnolia Bottling Works	50
OLEAN, N. Y.—Junk yards of Harry Levin	25
ELIZABETHTOWN, PA.—Barn on farm of E. Longencher	25



All That is Left of the Once Famous Miner's Theatre

This is the third time in seven years that fire visited the old playhouse. Tenants in the adjoining buildngs were forced to leave their homes. The railing in the lower foreground is the guard rail of New York's elevated system.

SPOKANE, WASH.—Grain whse. of Boyd Conlee Co. 40
POUGHKEEPSIE, N. Y.—Plant of Palatine Oniline Chem. Co. 90
BUFFALO, N. Y.—Plant of Webster Citizens Ice Co. 25
TOLEDO, OHIO.—Plant of Hixon-Peterson Lumber Co. 65
OMAHA, NEBR.—Orpheum Theatre damaged 80
CHICAGO, ILL.—Staver Auto Service Co. bldg. 40
CHICAGO HEIGHTS, ILL.—McKinldy School destroyed..... 150
PENSACOLA, FLA.—Plant of Harvey Lumber Co. 40
SELLECK, WASH.—Loading docks of Pacific Lumber Co. 150
ST. LOUIS ,MO.—Rickensohl Bros. Co. factory..... 40
DELAWARE WATER GAP, PA.—Water Gap Manor Hotel 40
EUFAILA, ALA.—Plant of Pine Lumber Co., 1 mi. East 40
LAWSON, SASK.—Property owned by J. Gunderson destroyed 25
VANCOUVER, B. C.—Plant of Jones & Son, adj. property 25
PERTH AMBOY, N. J.—Bldg. occupied by F. W. Grant store 80
M'GREGOR, TEX.—Mercantile property destroyed 65
FOSTORIA, KAN.—Hart bldg., adj. structure 25
METHUEN, MASS.—Business structures damaged 25

Week Ending August 16

POUGHKEEPSIE, N. Y.—"Altamount," Home of E. K. Lamont 125
FORT SILL, OKLA.—Snow Hall, artillery school..... 400
BRAYTON, IA.—Block of business bldgs..... 25
CHICAGO, ILL.—Bldg. occupied by Ora-Tone Radio Co..... 40
MEMPHIS, TENN.—Bldg. occupied by Otto Schwill & Co..... 80
BROOKLYN, N. Y.—Jacobs Bros., Inc., 36 Walton St..... 25
BAYONNE, N. J.—Oil tanker, Wm. Rockefeller..... 25
REDGRANITE, WIS.—Crusher plant, Wisc. Granite Co..... 35
BRAYTON, IA.—Block of business bldgs..... 25
OSHKOSH, WISC.—Anckersen-Hansen Bldg., adj. property..... 45
COUNCIL BLUFFS, IA.—Bluff City laundry destroyed..... 160
PORT ARTHUR, TEX.—Plant of Texas Co. refinery..... 160
SYRACUSE, N. Y.—Wieting Opera House block..... 45
ORONO, ME.—Several bldgs. in business section..... 60
MILWAUKEE, WIS—Plant of Economy Paper Products Co.... 80
HARTFORD, CONN.—Whse., 53 Hoadley Place, damaged 45
EXPANSE, SASK.—Salt wks., Bishopric & Lent Co., 2 mi. 400
BRADDOCK HEIGHTS, MD.—Hotel Braddock destroyed 80
TLYER, TEX.—Shop of St. Louis Southwestern R. R. 80
QUARTZBURG, IDAHO—Post o..ce and adj. bldgs. 80
GLEN ELLEN, CAL.—Sonora State Home for Feeble 250
MINNEAPOLIS, MINN.—Bldg. of Luger Cabinet Co..... 35
BIG FORK, MINN.—Five business bldgs. destroyed..... 65
TEAGUE, TEX.—Car shed of T. & B. Valley R. R..... 35
STURGEON FALLS, ONT.—Business and apt. block..... 30
TOFIELD, ALTA.—Eight buildings destroyed..... 45
LOUISVILLE, KY.—V. H. Schiad Co. establishment..... 25
LAKEVIEW, N. Y.—Barn on estate of J. F. Schoellkopf..... 45
SAN FRANCISCO, CAL.—Bldg. of Mutual Biscuit Co..... 40
STENT, CAL.—Bldgs. at Jumper mine destroyed..... 40
RUMSEY, ALTA.—Several business establishments..... 25
ORANGEBURG, S. C.—Bldg. of Fairfax Lumber Co..... 25
OKLAHOMA CITY, OKLA.—Plant of Standard Ref. & Material Co...200
MARSHALLTOWN, IA.—Sheds of Iowa Railway & Light Co..... 45
INDIANAPOLIS, IND.—Barns on W. H. Roberts dairy farm..... 65
FRANKLIN, LA.—Three business houses destroyed..... 45

Lambertville, N. J., Receives New Apparatus—A ladder truck equipped with a pump has been delivered to Lambertville, N. J. The purchase price is $11,000.

Dye Plant Damaged in Poughkeepsie

Fire damaged the seventy-five-year-old four-story factory of the Palantine Analine Chemical Company in Poughkeepsie in the course of a three-hour fight by the fire department. The cause of the blaze is unknown. Fire broke out on the top floor of the building and a telephone alarm was sent in at 8:05 a.m.

The plant fronted the river and was bordered by a lumber yard and other factory buildings. Had the fire reached the lumber yard, it would have swept the entire river front.

When the first company arrived, the top floor was involved and flames had broken through the roof. Two pumpers, a chemical car and a ladder truck responded on the first alarm. A second alarm sent in soon afterwards brought two additional pumpers. A twelve-inch main in the street supplied plenty of water at good pressure. Six hydrants supplied water at 140 pounds pressure.

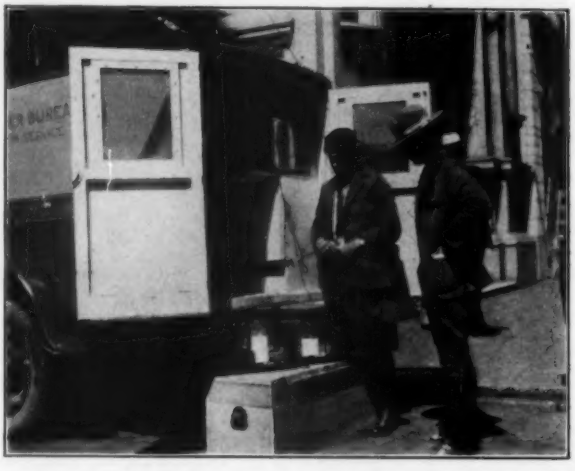
The fire was fought under trying conditions for the men. The burning dyes gave off poisonous gases.

Through the good work of Chief Chris Noll and his department, the fire was confined to the top floor and did not get outside of the building. The damage on contents and building has been estimated at $57,000.

Fire That Damaged Dye Factory in Poughkeepsie

Weather Station Aids Fire Fighters

During the fire-weather season in the forested areas of California there are a great many instances when weather forecasts are extremely necessary. On a large going fire covering several thousand acres, an accurate weather forecasting service can save many thousands of dollars. The United States Weather Bureau, in co-operation with the forest services, has mounted a mobile forecast unit on a motor truck. This unit is in charge of Mr. Gray of the United States Weather Bureau and who has had considerable experience as a forecaster. The only manner in which the official can get the information on which to base weather forecasts, is from the weather broadcast sent out each morning and evening, by the United States Weather Bureau, through NPG the naval radio station at Mare Island. This broadcast contains all the information necessary for constructing a weather chart from which the forecaster can determine what the coming weather will be . These broadcasts must be received under various conditions. The receiving set had to serve under most trying conditions. This made it necessary to construct a receiver that would cover sveral wave bands. To do this it was decided to build a receiver which would cover the frequencies from 16,000 to 108 kilocycles. This was done by making three separate receivers on one panel and completely shielding them from each other. All are mounted on an aluminum panel. These are seperated into the short wave, broadcast band and long wave receivers. The short wave unit and the long wave unit both use a common amplifier. The broadcast band receiver has a separate amplifier for quality reproductions.



Meteorologist Instruments Carried on Weather Unit Truck

The short wave unit uses a screen grid tube as a radio frequency amplifier. This is untuned. A regenerative detector using condenser control of regeneration and a two stage amplifier complete this unit. The broadcast band unit has one stage of tuned radio frequency using a screen grid tube, regenerative detector having a midget condenser for regeneration control. Two stages of high quality audio amplification completes this unit. In this case the condensers are Cardwell taper plate and the coils Silver Marshall.

The long wave unit has a regenerative detector and two stages of transformer coupled audio. The primary coil is in

the center with the secondary tickler coils on each side. Regeneration is controlled with a filament rheostat.

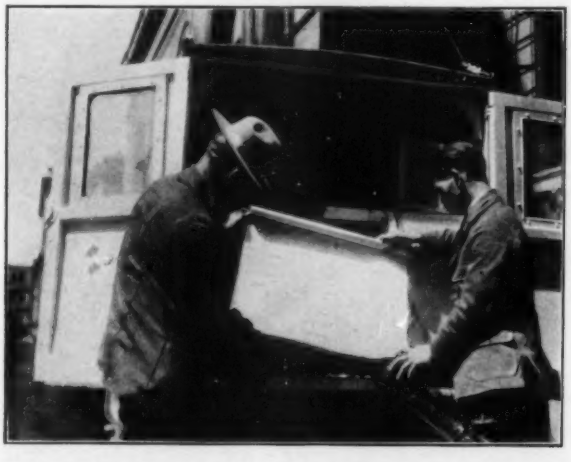
The common amplifier uses transformer coupling and is a two stage. The amplifier is connected to a switch which connects it to whichever unit is desired.

The entire receiver is housed in an aluminum cabinet. While enroute the entire receiver is packed in a case and the case suspended on four springs. This was ncessary because of the extreme roughness of the roads encountered in the remote regions. In many cases there were no roads at all. The "A" battery is connected to a switch so that the car generator may be used to charge it.

On test runs no difficulty was encountered in copying the 8590 or 108 kcs on a speaker, and broadcast stations within a radius of a thousand miles are easily tuned in on a loud speaker. Short wave stations over practically the entire world were received. No difficulty with broken apparatus was encountered because of the method of carrying them while in transportation.

In addition to this radio equipment, the mobile fire weather unit has been equipped with meteorological instruments for use on the fire area. The unit will maintain telegraphic communication with San Francisco and keep the dispatching agency notified of the whereabouts of the unit, actual and prospective.

Upon receipt of orders, the unit will proceed immediately to a large going fire, set up radio apparatus, establish temporary check or key weather stations in the fire vicinity, and issue detailed forecasts of weather, wind, temperature, relative humidity and other factors influencing the choice of



Fire Forecast Charts Prepared by Meterologist Accompanying Mobile Fire-Weather Unit

fire tactics and the ultimate control of the fire. Forecasts will be of the short period type, issued twice daily, together with such special advices as may be required in connection with backfiring and similar operations.

C. W. GEIGER.

Sons of Freedom Cooled With Stream

A parade of 150 members of the Sons of Freedom, staged in Kamsack, Sask., Canada, was broken up by firemen who gave the paraders a thorough soaking from fire streams. The demonstration ended before any harm was done.

Portland, Me., Has Know-Your-City Day—All fire apparatus of Portland, Me., was on display as part of the city's celebration when the residents were urged to know their city.

Orphans Guests of Detroit Firemen—Five thousand orphans were guests of the Detroit firemen at the first of the three baseball games to be played for the benefit of the fire department. The ticket sale is expected to show a $75,000 return.

Station Completed in Flintridge, Cal.—A brick and tile fire house of semi-Spanish design, has been completed in Flintridge, Cal. The firemen have started to landscape the grounds.

WELL ORGANIZED FIRE FORCE NEEDED TO CURB ARSONISTS

Search Often Reveals Tell-Tale Time Candle Marks or the Use of Gasoline—One Conviction Will Disuade Others from Such Crime

BY HENRY J. WILLIAMS
Chief of Fire Department, Macon, Ga.

MY procedure with reference to preventing incendiary fires is first to have a well organized fire prevention force consisting of a sufficient number of men who are competent in this work. Inspections are made at irreguar times to keep a close check on the types of buildings and the occupancy of same. Materials that are likely to cause fires are ordered removed from the premises, as good housekeeping is very essential if fires are to be prevented. Inflammable materials must be properly protected against fire. Persons storing it should be told of the dangers that develop if inflammable materials are kept in a careless manner. It should be pointed out that fires will not start if these precautions are taken, except by carelessness on the part of some person or by incendiarism.

Chief Henry J. Williams

When a fire occurs and I am uncertain of its origin I make a close inspection after the fire, if this is possible.

I am not content with just extinguishing a blaze, large or small. It is an unbroken practice here to resort to every means of tracing the origin of a fire to find out whether it was an accident, carelessness, or incendiarism. It is obvious that by obtaining this information a record can be kept of all fires that occur.

We always make a vigilant search if there is any indication that the fire has been set. A close check is made for the tallow candle, which we term a time fire. Many fires are invariably started by this method. If such means has been used an investigation will often result in some of the tallow being found in the ruins.

Gasoline and kerosene are also used by arsonists. This can be detected by the odor and in many cases sufficient evidence is secured to cause the apprehension of the guilty person or persons, especially if the liquid has been used in bottles or cans.

In every case where a fire is of a suspicious character, all the information we can secure, together with the evidence, is promptly turned over to the detective department and the state marshal. We assist in every way possible to catch and punish the guilty persons.

When the city is able to have two or three such criminals sufficiently penalized it will have a marked influence in reducing the number of incendiary fires. Then the activity of the fire prevention force will be rewarded. This would also have the effect of making the public realize that good housekeeping in all types of buildings, whether commercial or residential, must be observed. With this point firmly impressed upon them and also the fact that all fires are thoroughly investigated, they would refrain from such criminal action.

It is surprising to note that incendiarism is not wholly practiced and traceable to the common class, or degraded characters. Investigations have disclosed the fact that some of the people guilty of this crime are very prominent.

In the procedure I have outlined, with the full co-operation of the police department, the sheriff and his deputies, we have succeeded in apprehending the guilty person. In many instances these investigations require time and expense. Sometimes we consider it more profitable for the insurance companies to settle claims for fire losses, after we have a line-up, as the spending of money by the guilty person will solve the mystery of the crime.

On May 4th of this year we had an eighteen-year-old boy plead guilty of burning a vacant house. He was sentenced to two years in prison. Evidence, according to the press, stated that this young man was persuaded to commit this crime by others, in connection with the same fire, who have been indicted and are awaiting trial. I feel sure that the con-

viction of these parties and a couple of more cases which are now under investigation, will be the turning point in incendiary fires in our city. However, we are highly gratified with the results that have already been obtained.

Pacific Coast Chiefs Issue Treatise

Although modestly termed the Proceedings of the Thirty-fifth Annual Convention of the Pacific Coast Association of Fire Chiefs, the printed volume containing the papers presented and the report of the various meetings, really constitutes a compilation of the latest ideas in fire-fighting and fire prevention.

Within its three hundred pages is up-to-the-minute information on the trend of the times. Fire-fighting does not stand still. With each new change in living conditions or the introduction of some device to bring more comfort or enjoyment, there are brought new problems for the fire chief to face. The compilation of facts presents current treatment of important problems.

J. E. Mackie, manager and secretary, Pacific Coast Building Officials' Conference has an article on "The New Building Code." Other valuable articles are, "Selling the Fire Department to the Public Through the Bureau of Public Relations," by Chief Ralph Scott of Los Angeles; "Handling and Storage of Film," by Capt. V. E. Pieriet; "Fire Prevention Educational Work," by F. W. Roberts, fire marshal, Portland, Ore.; "Cleaning and Dyeing Establishments," by Jay W. Stevens, fire marshal of California; "Making a Fire and Water Report," by L. S. Bush, fire prevention engineer; "Fire Fighting Above Ladder Heights," by Chief George Mantor, Seattle; "Effective Methods of Fire Prevention Inspection," by Chief Edward Grenfell, Portland, Ore.; "Fighting Oil Fires," by V. M. Dupuy, fire protection engineer, Union Oil Company. There are other articles equally as interesting, but space does not permit a complete listing.

A limited number of copies of this valuable book are available. Copies are two dollars each, to defray the cost of printing, and may be obtained from Jay W. Stevens, Security Building, San Francisco, Cal.

N. N. W.

Telephone Typewriter Sends Alarm

A peculiar massive-looking typewriter forms the basis of the fire alarms system serving Upper Darby township, a suburban community of Philadelphia, Pa. At the same instant that an operator strikes the keys on the machine, machines in the buildings of the four companies print the message on a narrow paper strip that is unwound from a roll.

The modern system installed by the Bell Telephone Company of Pennsylvania, has greatly increased the efficiency of the department.

Formerly the thirty-three police boxes in the township were locked, and if a resident desired to report a fire it was necessary to find a policeman who had a key or to use the public telephone. Now all the boxes are opened, and to report a fire from a police box or telephone, the person talks to the one on duty in the township building. After having received the information, the officer turns to the telephone typerwriter and types a message which is instantly reproduced and accurately received by a receiving machine in all fire houses. The one at headquarters operates the siren of the company that is to repond. Other companies are in readiness to answer a call for assistance at the same blaze or another alarm.

Nearly nine miles of circuits are being maintained by the telephone company. While this installation was intended primarily for the benefit of the fire department, it is also available for police purposes.

The unit may be linked with the state-wide police system. Governor Fisher signed an appropriation bill providing $260,000 for the installation of telephone typewriters in 106 boroughs and towns maintaining 24-hour police service.

Apparatus Ordered for Louisville, Ky.—Mack fire apparatus costing $14,850 has been ordered for Louisville, Kv.

New Fire Alarm in Service in Harrisburg, Pa.—The new Gamewell fire alarm system has been placed in service in Harrisburg. Pa.

Chief Scott Celebrates Tenth Anniversary—Ralph J. Scott, head of the Los Angeles Fire Department, has just observed his tenth anniversary as chief. When he arrived at his office, he found a decorated desk on which were many messages of congratulations.

Skyscraper Standpipe Tested

In cooperation with owners of the Grant Building, and officials of the Pittsburgh Fire Department, consisting of Chief Richard L. Smith, Deputy Chief Frank G. Jones, and others, the standpipe in the new forty-floor office building was tested. This is the first building in the city to be erected with the set-back principle. A large crowd witnessed the test. Water was pumped up the standpipe by one of the new American-LaFrance high pressure pumpers recently installed in the high value district.

The pumper was connected to a fire hydrant in front of the building. The hydrant pressure was eighty-five pounds. All of the following tests were made with a pump pressure of 310 pounds; for the first three, two one-hundred-foot lines of three-inch hose were used, and for the next three, two five-hundred-foot lines of three-inch hose from the pumper to the standpipe.

First test, using both lines with one-inch tips, seventy pounds pressure, 247 gallons discharge were obtained on each line. Using the minor pump, with one line furnished

Test of the Standpipe in the Grant Building, Pittsburgh, Pa.

with a one-inch tip, 155 pounds nozzle pressure, 370 gallons were discharged.

Second test, using the two lines each with 1⅛-inch tip, fifty-two pounds nozzle pressure, and the major pump, the discharge was 270 gallons.

Third test, using the two lines each with 1¼-inch nozzles, thirty-four pounds nozzle pressure, and major pump, 269 gallons were discharged from each line.

With the same layout, and seventy-eight pounds nozzle pressure, 407 gallons were discharged.

Fourth test, using two lines each with one-inch tip, seventy-eight pounds pressure and the major pump, 261 gallons issued from each.

Fifth test, using two lines each with 1⅛-inch tip, sixty pounds nozzle pressure and the major pump, 290 gallons were discharged.

Sixth test, using the two lines each with 1¼-inch tip, forty-two pounds pressure, and operating the major pump, 299 gallons were discharged.

During the tests it was often necessary to shut down the lines and take off the nozzle to remove small pieces of bricks and other debris that were forced through the line.

Hampton Beach Department Modernized

The fire department of Hampton Beach, N. H., has been modernized and placed on an efficient basis under the direction of Chief H. B. Whiting. In 1921 the fire fighting equipment consisted of a Kissel combination chemical and hose wagon and six fire alarm boxes. There was a permanent chief and a force of volunteers.

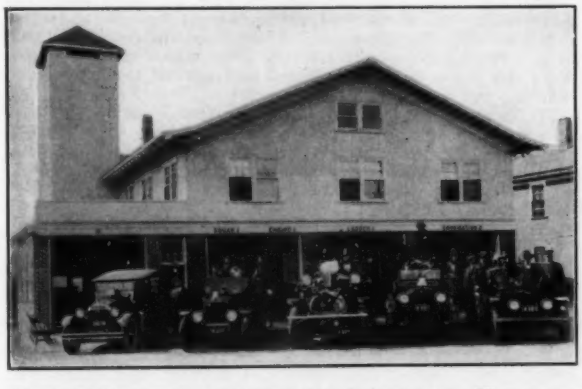
After a large part of the business section was destroyed by fire a 750-gallon Ahrens-Fox triple combination pumper was purchased and placed in service in 1922. In 1923 a two story fire station with three doors was built to replace a

Trailer Pump, in Use by the Hampton Beach, N. H., Fire Department, for Brush and Woods Fires and for Pumping Out Cellars.

previous structure that had been burned. Two permanent firemen were appointed in this year.

In March, 1924, H. B. Whiting was appointed as Chief. He is a veteran of the World War and after his discharge from government service he joined the fire department in the Canal Zone. Upon returning to the states he resumed his position with the New England Telephone and Telegraph Company, with which he had been connected when the war broke out. His next connection was as a member of the fire department in Haverill, Mass., where his father is a deputy chief. He was granted a six months' leave of absence to take charge of the Hampton Beach force and at the expiration of this period he resigned from the Haverill department to continue his work as chief in Hampton Beach.

The Hampton Beach department now consists of five permanent and thirty call men, seven pieces of motor apparatus and 88 fire alarm boxes. The apparatus is as follows: Ahrens-Fox triple combination pumper, Kissel high pressure wagon rebuilt in 1927, Reo combination hose and chemical



Central Fire Station, Personnel and Apparatus, Hampton Beach, N. H., Department

purchased in 1925, White city service hook and ladder truck bought in 1925, Chief's car purchased in 1926, Packard 400 gallon triple combination purchased in 1927, and a trailer pump built in 1927.

The fire alarm system manufactured by the Gamewell Company is of the manual type with 83 street boxes and five private boxes in hotels. The alarms are received in a watch station on fast time and re-transmitted on slow time. At the present time the Central Station is the only firehouse and the apparatus covers both the town and beach.

The trailer pump, assembled by the permanent men, can throw 110 gallons of water per minute, and is used largely for brush and woods fires. It is also used for pumping out flooded cellars. It can be towed by an automobile or pulled by five men.

This year Chief Whiting has enlisted fifteen boy scouts as an auxiliary unit to be called upon for aid in fighting forest fires. There are hundreds of frame cottages and several large hotels at the beach resort.

HARRY BELKNAP.

Fire House Opened in Pittsburgh

(*Continued from page* 724)

The captain's office is 10 feet 11 inches wide and 12 feet 3 inches long, with composition floor, and contains large linen closet, with toilet and wash room and shower bath adjoining, 6 feet 5 inches wide and 8 feet long, finished in tile and marble.

Seventeen large windows on the second floor of the building provide light and air to the dormitory, captain's office and toilet rooms.

The basement is approximately 8 feet deep and extends under the entire structure.

On one side of the basement directly beneath the apparatus room is located the hose trough, while on the opposite side of the basement is located a row of ten large sized lockers for the use of the men.

The interior walls and ceilings of the building are all painted a light buff color, while all the interior wood work is stained and finished in dark oak.

At the rear of the building is an outside entrance from the yard to the lounging room, as well as an outside staircase leading into the basement.

Engine Company No. 21 consists of an American-La France 750-gallon triple combination gasoline pumper, with twelve men, six on each turn or platoon.

WM E. PATTERSON.

Cure for Static Electricity on Belts

Static electricity has been often blamed for dust explosions or the cause for serious fires. In an industrial plant, the static electricity may be generated by a belt rubbing on a pulley, particularly if the air is dry.

Because of this, engineers in the United States Department of Agriculture have tried to devise methods for taking the static out of the belt, or to conduct the electricity harmlessly to the ground before it has opportunity to reach a dangerous voltage. If it were possible to use a metal belt, that would solve the problem, but the leather and rubber belts in common use are practically non-conductors of electricity. One successful result of the search was the discovery that lampblack mixed with suitable vehicles and applied in a thin coating to a belt would provide a surface that prevented the formation of static electricity. The chemical engineers experimented with various materials which would keep the lampblack on the belt, would not reduce the friction so that the belt would slip, and which would also wear well and not cause the belt to stretch. In the case of rubber belts they found that a mixture of lampblack and spar varnish, containing a non-inflammable thinner served satisfactorily.

For leather belts a mixture of lampblack, liquid fish glue, glycerine, sulphonated castor oil, and water served to conduct the static, and was easily applied while the belt was running, but it was found that unless the belt has been well cared for previously, the mixture would cause it to stretch, and that tightenings of the belt would be required. Adding lampblack to the usual belt dressings on the market did not prove effective, because these dressings would not then stay on the belt, and the electricity would again accumulate.

Fire Damages Middletown Fire House—The fire house in Middletown, Pa., was damaged by a fire believed to have started by a lighted cigarette.

Central Firemen to Meet in Dubois Next Year—The 1930 convention of the Central District Firemen's Association will be held in Dubois, Pa.

Atlanta Fireman Risks Life for Baby—W. T. Holt, Atlanta, Ga., fireman, risked his life in a successful attempt to rescue a baby from a burning building. After rescuing the infant, he guided the other members of the family to safety.

Dangers of Modern Refrigeration

(*Continued from page* 718)

As mentioned previously, carbon dioxide is an expansive gas, but is not an explosive nor an irritant but the cylinder pressure will be easily raised by the application of heat. Take one of those cylinders, which are filled at a pressure of 65 or 70 atmospheres, approximately 1,000 pounds, and put it out in the rays of the sun and you are apt to have a mechanical rupture. It has occurred before and it will occur again. If placed too close to any heated body where the heat may affect the gas in the cylinders, it may cause an explosion. So I say the only reason by which we might have trouble with this gas is excess pressure.

Just to illustrate what may happen: in one of our large theatres which has installed a carbon dioxide plant for cooling the air, the engineer got a little bit of a souse on and he failed to open the necessary valve which should be opened permitting circulation, with the result that there was a mechanical rupture in that large theatre. There was no panic, but there could have been.

One danger in carbon dioxide plant mechanical rupture would be pieces of flying metal thrown by the great pressure in the cylinder. Somebody might be injured, for the metal is thrown a great distance in a very forceful way.

Sulphur Dioxide Unit in Theatre

Now, regarding refrigeration in a theatre, I wish to tell you an incident regarding a plant, a small unit, that was taken into a theatre, containing sulphur dioxide, a gas that might have caused a panic when the house was crowded. We got knowledge of it quickly and it was removed from the premises. You may have a condition like that to contend with. I refer to it that you may think of it later on. It will bring something home to you regarding these places of amusement in your own locality. In this particular place of amusement there was a confectioner who sold ice cream cones. He was always needing more ice, so he installed a sulphur dioxide plant to keep the ice cream from melting in the theatre. As I said, our people got wise to it with the result that it was immediately removed. Imagine what would happen if sulphur dioxide gas was liberated in a theatre, where there were a large number of people. I don't need to say anything more about it. I will leave it to your own imagination. But be on the alert to discover such conditions where they exist.

Sulphur dioxide is a very strong irritant, but it does not form an explosive mixture with air. Masks are very necessary in controlling leaks or ruptures. You all know what sulphur dioxide is. It is the same gas you would get from a burning sulphur candle.

There is on record a case in Jersey where a multiple system was used, and something went wrong with the piping connecting with the system in one of the apartments. Of course, if either you or I get up against sulphur dioxide gas, we are going to move quickly, but in this particular case they didn't move so quickly and I believe they had to take the occupants of that apartment down by way of the fire ladders. This gas gives a warning by the odor, and you should get out as quickly as you can if you live in an apartment where they have a multiple system. If it is individual refrigeration, it doesn't amount to much, but if you have fifty or sixty families on a multiple system there is a great deal more gas. The individual units, I believe, have been between five and seven pounds of refrigeration. It is usually sulphur dioxide, or a mixture of ammonia and water.

We have also ethane gas, used for refrigerating purposes. It is a product of petroleum. It, too, is highly expansive. It is explosive and if used at high pressure—1,000 to 1,500 pounds on the high pressure side and on the low pressure side without safety valves, 760. No person can volunteer what the results might be if a leak in the system allows this gas to escape. It is explosive in mixture with air where an open light, flame or spark might be present. Of course, in all such cases you have got to have an open light, flame or spark to have an explosion.

Now, coming down to these hard ones, something we hardly ever hear about but some of which are products of petroleum also. They are used at low pressures but retain the same explosive hazards as petroleum gases, and they are inflammable.

Ethyl chloride is made from grain alcohol. Ethyl chloride forms an explosive mixture with air, and is inflammable.

Methyl chloride is made from wood alcohol.

Dichloromethane; dichloroethylene; trichloroethylene are compounds of petroleum and chlorine gas. The last two form explosive mixtures with air and the same hazards also exist.

Any information that I have given you as to the explosive character of the gases used in mechanical refrigeration plants comes from our department chemist, who is a qualified authority on these things.

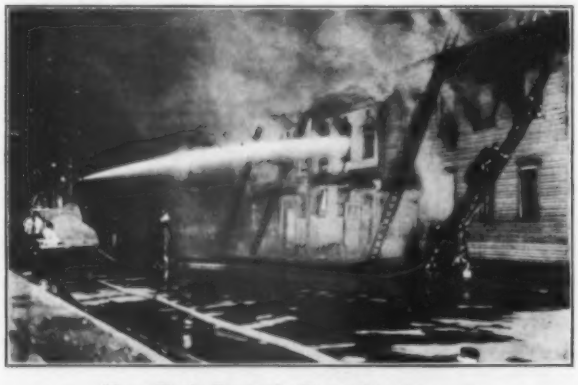
It may be that you would like to get some information from somebody in your home locality regarding compounds used in chemical refrigeration, or at any other time, and I say to you, always go to a disinterested party, a man who is not apt to have any interest in the compound you are asking him about. If you don't get your information there, such information is always available to you at any time at the Bureau of Mines at Washington. They will gladly furnish you with the information and it is worthwhile information because it comes from disinterested sources.

I have in my pocket here a small book—a copy of the rules and regulations covering mechanical refrigeration in the city of New York, and I was going to suggest to your President, in order that each and every member of this organization could have a copy of it—that it be printed in the minutes of the proceedings of this convention, then when you get your copy you can read the regulations governing mechanical refrigeration in the city of New York, and if any section or paragraph in it appeals to you, it is there for you to use.

As I said before, all fire chiefs should dig down deep into this subject of mechanical refrigeration; and in an emergency we should make careful estimate of the conditions that exist. We won't be able to make this careful estimate if we don't dig down deep beforehand and get all the knowledge that we can regarding the subject.

We never know what will happen. You know as well as I do that you can always reconstruct a building, that you can always install a new refrigerating plant, but don't forget that you can't bring back the life of any member of your department who may lose it in the discharge of his duties in these days of emergency.

Presented at the New Haven, Conn., convention of the New England Fire Chiefs' Association.



New York Depends Upon Big Streams

Always an advocate of the use of large fire streams where essential, officials of the New York Fire Department had a practical demonstration of the theory at a four-alarm fire in Brooklyn. At this fire three cabarets and a riding academy were involved. Horses stampeded down the main thoroughfare, but were later brought back, so that in all 120 animals were saved. The flimsy, wooden buildings presented a dangerous fire problem.

Begs Capital Punishment for Negligence

Under age-old tribal laws of the Kootenai Indians, the penalty for conduct unbecoming a warrior was death. An aged member of that tribe walked up to fire-fighters and said that his camp fire had started the great forest fire conflagration near Marcus, Wash., and he asked that they shoot him.

The flames had wiped out three farms and burned over three thousand acres of timber land.

New Assistant Chiefs Named in Los Angeles—Three Los Angeles batallion chiefs have been named assistant fire chiefs by Chief Ralph J. Scott. They are Chiefs Herbert M. Wetherell, Charles J. Howley and Edward C. Phelps. Other promotions were made down the line.

Prison Fires

(Continued from page 720)

chances that a civilian enjoying personal privileges might not consider.

Fire apparatus in a prison yard would be dangerous to the prison officials unless the prisoners were kept at a safe distance. Each unit has axes, crowbars, picks and other tools, which in an uprising, might prove effective weapons.

Where the pressure in the mains is good, the fire might be fought from the prison walls. Most times, as in the cases illustrated, the streams can only be depended upon to wet down nearby structures. Usually the prison is located at a remote part of the town where the pressure in the mains is poor. As all machinery and power units in connection with the institution are housed within the prison proper, even if there should be a fire pump, it may be impossible to reach the control mechanism.

Luckily every city fire department is not called upon to protect penal institutions. But the lessons learned at the recent uprisings indicate clearly how ineffective fire departments may be at such times, and how dangerous the situation may result for the fire-fighters.

Northwest Fire School to Meet

(Continued from page 722)

contemplated to prepare pamphlets containing much of the information in their talks for distribution to the men at the school.

F. S. Crawford, engineer, Bureau of Mines, U. S. Department of Commerce, will then outline briefly the plans for the first aid instruction which will be held during the afternoon. George Lockhart, drillmaster of the Minneapolis Fire Department, will also outline his plans for the afternoon drill evolutions. At luncheon the formal addresses of welcome will be given. The group will then adjourn to the drill school for the afternoon evolutions.

On Tuesday morning Ben E. Bangerter, fire chief, Mankato will present the subject of "Minor Equipment" which should prove interesting to every individual present. An exhibit of minor equipment will be used to accompany the talk. J. E. Florin, superintendent of fire prevention, Wisconsin Industrial Commission, will discuss the question of private fire fighting equipment and its utilization. He will explain the various auxiliary appliance employed including stand pipes, sprinkler systems, chemical extinguishers, and steam jets. The morning session will conclude with a round table discussion on the subject of "Overhauling after Fires" to be conducted by Ernest Lee, of the St. Paul Fire Department.

"Chemistry of Fire" will be the first subject of discussion for the Wednesday morning meeting. L. H. Reyerson, associate professor of chemistry, University of Minnesota, will address the group on this topic, accompanying his lecture by demonstrations. Clarence Goldsmith, assistant chief engineer, National Board of Fire Underwriters, Chicago, will offer the subject of "Combustibles, Explosives and Hazardous Materials; Oil Storage Tank, Filling Stations, Tank Wagons and other Hazards concerned with the Oil Business." At the luncheon meeting that day there will be short talks by speakers from the five states represented at the school.

The Thursday morning meeting will open with a talk on "Fire Fighting by Modern Methods with Special Emphasis upon the Application of Such Methods to the Small Fire Department," by Frank C. McAuliffe, chief of patrols, Chicago Fire Insurance Patrol. John Townsend, superintendent of the salvage corps, St. Paul, will discuss the question of whether or not municipal fire departments should do salvage work. His talk will be followed by a demonstration of this work. Thursday evening the men attending the fire school will be entertained at a banquet. Arrangements for the entertainment are now being made.

The last day of the school will prove as interesting as any of the previous days. The problems of fire fighting and fire prevention in the small town will first be discussed by Albert Clemens, fire department engineer, Louisville, Kentucky. The extremely important subject of "Dust Explosions" will be presented by David J. Price, engineer, Chemical Engineering Division, Bureau of Chemistry and Soils, U. S. Department of Agriculture. Mr. Price's address will be illustrated by motion pictures and by actual demonstrations. The morning session will conclude with a round table discussion on "The Principle and Proper Operation of Motor Pumping Equipment," to be conducted by Herbert Penny, Minneapolis.

The second annual fire school will end on Friday afternoon at the close of the regular drill squad evolutions and first aid instruction.

G. A. Wood, Chief of Niagara Falls

Acting Chief George A. Wood has been named head of the fire department of Niagara Falls, N. Y., to fill the vacancy caused by the recent death of Chief R. D. Miller.

Mr. Wood joined the volunteer force as a member of Active Hose Co. No. 6 in 1892. When the paid fire department was instituted in 1894, he became a member of the regular force. He was promoted to assistant chief June 4, 1901, and made acting chief December 9, 1928, when the late Chief Miller was granted a leave of absence because of ill health.

Chief Wood is a member of the Spanish War Veterans and the Exempt Firemen's Association. He is fifty-eight years old.

Massachusetts Chiefs Hold Outing

The annual Ladies' Day and Outing of the Fire Chiefs' Club of Massachusetts is to be held August 22 at Hampton Beach, N. H. Guests will be received at fire headquarters and dinner will be served at the Ashworth Hotel. Prizes have been provided for the winners of the various contests. Following the dinner, the guests will be given a ride along the New Hampshire shore.

Capt. Sheedy Celebrates Anniversary

Capt. John J. Sheedy, in charge of salvage work in Albany, N. Y., has just celebrated his twenty-fifth year as member of the protective organization.

He worked his way up from a call man. On two different occasions he received medals for bravery. Seven years ago, Capt. Sheddy started lecture work and since then he has been the department speaker before various schools and civic organizations.

Ex-Fire Marshal a Miami Booster

William L. Beers of Miami, Fla., who for 12 years and until 1911 was Fire Marshal of the City of New York, has taken an office at 15 Park Row, New York City, during the summer and is endeavoring to interest retired policemen and firemen in settling in Miami, which, he says, has the finest climate in the world.

Mr. Beers was a Lieutenant in the Navy in the Spanish-American War, and also gave service in naval matters in the World War. He is a member of the Veterans of Foreign Wars, of the United Spanish War Veterans, the American Legion and of the Emergency Disabled Officers of the World War. Lieut. Beers was injured in the World War and retired under the Tyson-Fitzgerald Act for emergency officers who were injured.

Magnolia, Pa., Opens Fire House—The $40,000 fire hall has been officialy opened in Magnolia, Pa.

Lafayette, Ind., Selected for 1930 Convention—The 1930 convention of the Indiana Firemen's Association will be held in Lafayette, Ind., July 29-31.

Peekskill, N. Y., to Buy Pumper—Bids have been received by Peekskill, N. Y., officials for supplying a new pumper.

Medina to Protect Shelby, N. Y.—A contract has been consumated whereby the town of Medina, N. Y., will furnish fire protection to Shelby, N. Y. This does away with the delay that was experienced in the past when it was necessary to obtain permission to remove fire apparatus to points outside of the village.

Missoula, Mont., Next Convention City—The 1930 convention of the Montana State Firemen's Association will be held in Missoula. At the convention held in Butte, Simon Behan of Butte was elected president; Chief Henry Quane, Anaconda, vice-president; D. E. Moser, Bozeman, re-elected secretary-treasurer, and Chief Frank J. O'Malley, Glendive, Richard Coe of Helena and Pat O'Brien, Butte, were chosen as members of the Board of Directors.

FIRE DEPARTMENT ACTIVITIES

Glenn Dale, Md., Places Cornerstone—The cornerstone has been laid for the new fire house in Glenn Dale, Md.

Lewistown, Me., to Buy Aerial Ladder—Lewistown, Me., is considering the purchase of an aerial ladder.

Fire Prevention Bureau Started in Toledo—A Fire Prevention Bureau has been established in Toledo, Ohio.

St. Helens, Ore., to Buy Pumper—St. Helens, Ore., will purchase a 500-gallon pumper, and a combination ladder and hose truck.

Sioux City, Ia., to Erect Fire House—A contract has been awarded for the construction of a fire house in Sioux City, Ia., to cost $32,000.

Manassas, Va., Buys Pumper—Manassas, Va., has purchased a 500-gallon Buffalo pumper, equipped with a 100-gallon booster pump.

Department Organized in Cottage Grove, Cal.—A fire department has been organized in Cottage Grove, Cal. William A. Bradford is chief.

Willard, O., May Buy Apparatus—The city council of Willard, Ohio, has been deadlocked for some time over the selection of fire apparatus.

Monroe, Mich., Erects Drill Tower—Work has started on a drill tower for Monroe, Mich., to cost $1,000. The city recently purchased an aerial truck.

Somerset County Firemen Close Successful Meet—Two hundred attended the meeting of the Somerset County Firemen's Association at Somerset, Pa.

E. Liverpool, O., to Erect Central Station—East Liverpool, Ohio, is to issue $60,000 bonds to finance the construction of a central fire station.

Jamestown, N. Y., Celebrates Anniversary—The hundredth anniversary of the founding of the Jamestown, N. Y., fire department was celebrated by a dinner.

Lebanon, Pa., Firemen Erect Shaft—A shaft was erected in the firemen's block in Mt. Lebanon Cemetery by members of the Lebanon, Pa., fire department.

Fire Company Presented With Fire House Site—The Kimberton Fire Company of Pottstown, Pa., has been presented with a lot on which to erect a fire house.

Work Started on Illion, N. Y., Fire House—Ground has been broken for a new fire house to be erected in Illion, N. Y. It will house two pieces of fire apparatus.

Los Angeles Wants New Fire Station—Los Angeles asked for an appropriation of $60,000 for the erection of a fire station in the San Pedro and Wilmington district.

A. Gilleo Representing Ahrens-Fox—A. (Jack) Gilleo, Convention Building, Detroit, Mich., is now Michigan state representative for the Ahrens-Fox Fire Engine Co.

Detroit Firemen Give Showers to Youngsters—During the hot sweltering days, Detroit firemen treated the youngsters to street showers at 150 different locations in the city.

Cleveland to Have New Fire House—A new fire house costing $80,000 will be erected in the heights section of Cleveland, Ohio. The building will be of Tudor design.

Insurance Rates in Ohio May be Reduced—According to T. B. Sellers, head of the Ohio Inspection Bureau, there may be a general reduction in insurance rates for the entire state of Ohio.

Altoona, Pa., to Study Fire Protection—A general survey and study of fire protection needs will be made in Altoona, Pa. Additional equipment is needed to protect annexed territory.

Warren, R. I., to Get New Ladder Truck—A ladder truck, costing $10,000, has been delivered to Warren, R. I. It was on display at the convention of the New England Fire Chiefs' Association.

Request for More Men in Youngstown Opposed—The city finance director of Youngstown, Ohio, is opposed to the suggestion of Chief Callahan that seventy additional firemen be appointed.

Keokuk, Iowa, Adopts Two-Platoon System—The two-platoon system has been started in Keokuk, Ia. Firemen are on duty for twenty-four hours and then have twenty-four hours off.

Keokuk, Ia., Honors Chief Anderson—Chief John Anderson of Keokuk, Ia., who has served the fire department for over fifty years and who is now to retire, was presented with a gold watch charm.

Spokane, Wash., Firemen Seek Increase—Petitions are being circulated in Spokane, Wash., seeking an increase of twenty-five dollars a month for each member of the fire department.

Manchester, N. H., Considers Apparatus—Manchester, N. H., is contemplating the purchase of two pieces of fire apparatus for $23,000. A year ago, a request for new apparatus was turned down.

Wisconsin Passes Anti-Fireworks Law—A bill regulating the sale and use of fireworks throughout Wisconsin has been passed by the state legislature. Public displays by permits only are provided for.

Amherst, Mass., to Erect a Fire House—Contracts have been awarded for the construction of a fire house in Amherst, Mass. Plans were drawn by George Ernest Robinson, architect, of Boston.

Burning Trolley Brought to Fire House—When lead wires on a trolley in Monongahela, Pa., caught on fire, the burning trolley was towed to the nearest fire station where the blaze was extinguished.

Gadsden, Ala., to Have New Fire House—Contracts have been awarded for the construction of a new fire station in Gadsden, Ala. The house will be of brick and stone, and will also contain the police station.

Binghamton, N. Y., to Have Bungalow Station—Work is being rushed on the bungalow fire station for Binghamton, N. Y. This will be the first fire house of this type erected in the city. The building will cost $28,000.

Eighty Chicago Firemen Promoted—Eighty of the 2,300 Chicago, Ill., firemen who took the promotional examination for lieutenant have been made officers. In addition, 319 will be eligible for appointment to fill later vacancies.

San Fernando Valley Wants More Protection—Owensmouth, Cal., has been asked to furnish added fire protection for the West San Fernando Valley. An appropriation of $25,000 has been asked to make this possible.

Ohio Firemen Select Napoleon—The 1930 convention of the Northwestern Ohio Volunteer Firemen's Association will be held in Napoleon. John Schaffer was re-elected president and C. R. Bowersox of Toledo, secretary.

St. Paul to Erect New Fire House—Bids have been invited for the construction of Station No. 5 in St. Paul, Minn. According to estimates of the city architect who prepared the plans, the station will cost $35,000. It is to be two and one-half stories high and of English design.

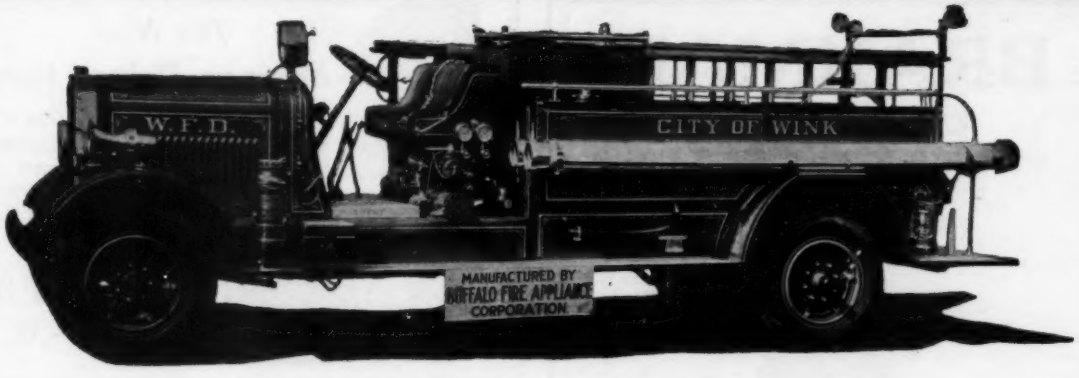
Chief Ringer Asks for $1,500,000—Chief C. W. Ringer of Minneapolis, Minn., has presented a budget of $1,500,000, or an increase of $225,000 over the previous one. There are 556 men in the department and Chief Ringer has asked for fifteen more men.

Work Started on Brighton, Mass., Fire House—Construction has started on the $122,000 fire house designed for Brighton, Mass. The main building is three stories high with a basement. It has an ell, and a drill tower that is six stories high. The station is also to be used as a drill school.

Minneapolis Increases Age Limit—In order to take care of a large number of applicants, World War veterans who have been on the eligible list for two years without reaching appointment, the age limit of new men for the Minneapolis, Minn., department has been raised to thirty-five years.

New Stunt Tried in Chelsea, Mass.—Capt. John T. Lehan of the Fire Prevention Bureau, Chelsea, Mass., has found a way to facilitate his work. He carries a camera with him in his inspection of hazardous places, and after warning the owners to clean up, photographs the scene. The pictures are placed in the files at City Hall. Should any of the owners fail to clean up, the photographs furnish evidence to be used in court action.

Increase Urged for Topeka Firemen—Many of the prominent business men of Topeka, Kans., have written to the city commission urging that a fifteen per cent increase in pay be granted the firemen. At present firemen receive $112 a month for the first eighteen months in service, then $128, and first-class firemen $144 a month.



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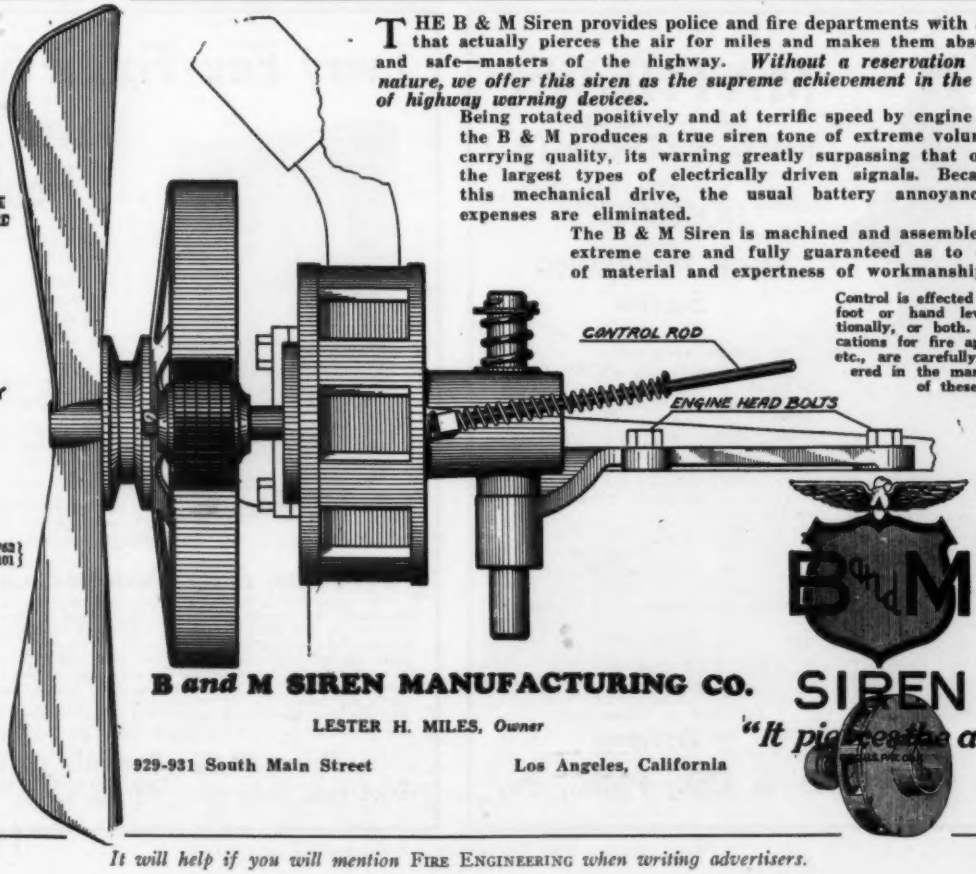

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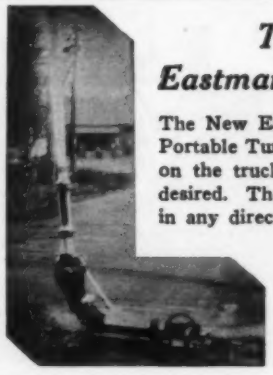

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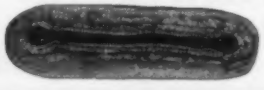

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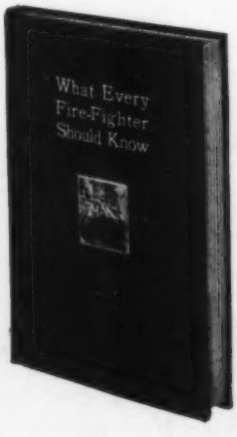

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The Round Table

(*Continued from page 726*)

the sum of fifty dollars for the run and first hour's work at the fire. We only answer calls where an agreement has been signed.

Harry Cash, Chief, Marion, Ill.: We answer calls to our neighboring citizens. We have what is known as the Egyptian Fire Fighters Association. When I receive a call to assist a neighboring city, a call is transmitted by us to the next closest city to send one piece of their apparatus to remain in our city until we return from the out-of-town fire to which we have been called.

We have never made any charge for rendering assistance to neighbors.

Frank B. Moore, Chief, Nashville, Tenn.: The fire department responds to calls sent in from outside the city limits. It is not compulsory that this be done, or that men should go. However, permission is given by the chief to go and take the apparatus, and the cases have been rare where the men have refused to go.

The city does not charge anything at all for service rendered by the men or apparatus. Assistance is also given to adjoining cities upon request without charge.

Elsworth Kocher, Chief Phillipsburg, N. J.: We respond to outlying districts when a telephone call is received asking for assistance. We have responded to several calls from Alpha, Martins Creek, Stewardsville. We have also responded to calls from Easton, Pa. While we do not charge for this service, we do receive donations of from ten to twenty-five dollars.

Walter Wise, Chief, Gallipolis, Ohio: We respond to outside calls whenever it is possible for us to be of assistance. Up to the present time we have not charged for answering these calls. However, if the ones receiving aid feel they want to make a donation, it is accepted and used for better equipment to assist them the next time.

W. O. Matthews, Chief, Bozeman, Mon.: We answer outside calls but do not go further than one mile from the city in doing so unless we have the consent of the mayor.

No charge is made for such calls. However, sometimes we receive a donation which is put into our Firemen's Pension Fund.

R. S. Hoffman, Chief, Clarksburg, W. Va.: We respond to calls for help from rural communities if there is a sufficient amount of water supply available for our use. We do not charge for this service.

Claude Dunmire, Chief, Vandergrift, Pa.: We respond to any outside calls we receive from those needing assistance. We make no charge whatever for doing so.

W. Boyer, Chief, Ironwood, Mich.: We respond to calls from rural districts without charge. This question of making some charge has been raised several times in the past but nothing has been done so far. No doubt something will be done in the near future.

James J. Minch, Chief, Ansonia, Conn.: We respond to fire calls from rural or neighboring communities when called upon.

John Lahm, Chief, Madison, Wis.: When conditions are favorable we respond to fire calls from rural districts and make no charge for the call.

I. R. Wilson, Chief, Madison, N. J.: Yes, we do answer calls from rural or neighboring communities but no charge is made for this service.

L. C. Brown, Chief, Fairbury, Neb.: We answer alarms for help from rural districts and small villages. We charge for the actual expense incurred, figuring the time of the men at the salary they draw, but no charge is made for the use of the apparatus.

James J. Mulcahey, Chief, Yonkers, N. Y.: We respond to calls for aid when the request comes from the chief of adjoining villages and cities. No charge is made for this assistance.

Alex. W. Dotson, Chief, Elkhart, Ind.: We respond to calls from rural or neighboring communities. If water is available we send a pumper. If not, we send a city service truck.

We do not charge anything for this service. However, if any money is received it is put into the pension fund.

W. F. Woods, Chief, Portsmouth, N. H.: We answer all calls from neighboring communities but do not charge anything for doing so.

M. J. Brun, Chief, Fort Smith, Ark.: We respond to calls from rural or neighboring communities without charge. However, I believe the sum of fifty dollars per hour should be charged for each company responding.

Albert Krenz, Chief, Clinton, Iowa: We sometimes answer calls from rural and neighboring communities but no charge is made for the service.

F. A. Tenney, Chief, Braintree, Mass.: We respond to fire calls from out-of-town districts when called upon to do so. No charge is made for the assistance given.

C. C. Meador, Chief, Roanoke, Va.: We answer calls from rural districts within a reasonable distance and do not charge anything for doing so.

John J. Maloney, Chief, Haverstraw, N. Y.: While we answer calls from rural or neighboring communities, we only send one truck in response to such calls. No charge whatever is made for responding.

Thos. F. McNamara, Chief, Wellesley, Mass.: Yes, we answer calls from rural districts but do not charge for rendering this aid.

E. T. Ricker, Chief, Biddeford, Me.: We have quite an extensive wood growth on the outskirts of our town and there is a mutual agreement with neighboring communities whereby they assist this fire department in combating the wood fires. We in turn send a pumping engine and company to their assistance when requested to do so by a responsible official of the town. However, very few calls for aid are received in the course of the year.

W. E. Holland, Chief, Raleigh, N. Car.: In responding to calls from rural or neighboring communities we do not make any charge.

Henry Young, Chief, Depew, N. Y.: We respond to fire calls from neighboring communities. While we have never charged for this service, donations are accepted and put into the department fund.

James Davis, Chief, Farrell, Pa.: We answer all calls received from outside the city limits as a matter of courtesy. No charge has ever been made for doing this.

F. M. Hageman, Pratt, Kans.: We do not make any charge for responding to fire calls from rural or neighboring communities.

T. B. Parks, Chief, Hannibal, Mo.: Yes, we respond to calls from other towns in the county. However, we do not charge anything for rendering this assistance as we feel we should help our neighbors in the time of need.

Glendale, Cal., to Erect Central Station—A contract for $62,017 has been awarded for the construction of a central fire station in Glendale, Cal. The Gamewell Company has been awarded a contract for $117,800, for the installation of a fire alarm system.

Wants Engineer for Fire Marshal's Job—Washington, D. C., is to hold an examination of applicants for the post of fire marshal made vacant by the resignation of Fire Marshal L. V. Seib. The applicant is required to have an engineering degree from a school of recognized standing, or its equivalent in actual experience. Chief George S. Watson stated that the fire marshal must confer with technically trained men, and that an engineering education is essential.

Damaged Planes Burn Very Rapidly

Fire protection at the various flying fields must be so arranged that aid can be given quickly, for airplanes, once ignited, burn rapidly. Employees at the aviation field of Roosevelt, L. I., rushed carbon dioxide extinguishers in an attempt to save an English Gypsy Moth Plane. One person died instantly in the flames and a passenger died shortly afterwards in the Mineola Hospital.

PROPOSED IMPROVEMENTS

El Paso, El Paso Co., Texas.—The attorney general's department has voted in favor of fire station bonds to the amount of $50,000.

Sonora, Tuolumne Co., Cal.—Funds are being raised for the purchase and installation of fire alarm boxes.

Morrison, Whiteside Co., Ill.—As a result of a recent fire the subject of the farming community purchasing some sort of fire equipment for its own use has again been brought up.

Scienceville, Mahoning Co., Ohio.—The City Council has authorized the Board of Control to contract for the erection of a fire station.

Haleyville, Winston Co., Ala.—Reports state that a new fire truck is to be purchased for the local fire department.

Pasadena, Los Angeles Co., Cal.—The National Board of Fire Underwriters has recommended the purchase of the following material: two 750 gal. pumpers equipped with divided hose bodies and chemical or water tanks, also the installation of additional fire alarm equipment.

Evansville, Vanderburg Co., Ind.—Board of Public Safety voted in favor of purchasing a 1000 gal. pumper and a service truck. Bids will be called for shortly. Estimated cost $23,000. U. S. Grant, Chief of Fire Dept.

Proposals for Fire Apparatus

CITY OF FARGO, N. D.

Bids received August 26, 1929

The City Auditor of the City of Fargo will receive until 10 A. M. Monday, August 26th, 1929, sealed bids for the furnishing and delivering to the City of Fargo one six cylinder triple combination hose, chemical and pumper, capacity 1,000 gallons against 120 pounds net pressure and sundry equipment.

Specifications for equipment may be obtained from J. W. Sutherland, Chief of the Fire Department.

Each bid shall be accompanied by specifications and a certified check of Five Hundred ($500.00) Dollars.

The Board of City Commissioners reserves the right to reject any and all bids and purchase equipment best suited for the Fargo Fire Department.

A. R. WATKINS,
8-21 City Auditor

Position Wanted

Fire Apparatus salesman with ten years' experience desires change. Can give very best references. All correspondence must be held strictly confidential. Address Box 190, c/o Fire Engineering, 225 W. 34th St., New York City.
8-7, 21.

CONVENTION DATES

Aug. 20-23—FIREMEN'S ASSOCIATION STATE OF NEW YORK. 57th Annual Convention, Saranac Lake, N. Y. Secretary, Fred A. Davis, Fort Edward, N. Y.

Aug. 20-24—INTERNATIONAL ASSOCIATION OF MUNICIPAL ELECTRICIANS. Annual Convention, Hotel Statler, Boston, Mass. Secretary, H. N. Lang, Box 1864, Orlando, Fla.

Aug. 26-28—NEW MEXICO STATE FIREMEN'S ASSOCIATION. 7th Annual Convention, Gallup, N. M. Secretary-Treasurer, Theodore A. Rosenwald, Albuquerque, N. M.

Aug. 28-30—VIRGINIA STATE FIREMEN'S ASSOCIATION. 43rd Annual Convention, Lexington, Va. Secretary, E. K. Landis, Pulaski, Va.

Aug. 29-31—INDIANA FIREMEN'S ASSOCIATION. 13th Annual Convention, Lafayette, Ind. Secretary, Clem Smith, Fire Headquarters, Terra Haute, Ind.

Sept. 3-5—KENTUCKY FIREMEN'S ASSOCIATION. 10th Annual convention and 2d Short Course for Firemen, Ashland, Ky. Secretary, Captain S. G. Render, 303 Speed Bldg., Louisville, Ky.

Sept. 9-11—ARKANSAS STATE FIREMEN'S ASSOCIATION. 8th Annual Convention, Camden, Ark. Secretary-Treasurer, H. D. Compton, Central Fire Station, Little Rock, Ark.

Sept. 10-12—ILLINOIS FIREMEN'S ASSOCIATION. 42nd Annual Convention, Joliet, Ill. Secretary, Assistant Chief Roy W. Alsip, Fire Department, Champaign, Ill.

Sept. 17-18—IOWA STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Red Oak, Ia. Secretary, E. E. Parsons, Marion, Ia.

Sept. 18-19—MISSOURI ASSOCIATION OF FIRE FIGHTERS (Consolidated with former Missouri State Association of Fire Chiefs). Annual Convention, Jefferson City, Mo. Secretary, M. J. Mulvoy, 3500 S. Grand Boulevard, St. Louis, Mo.

Sept. 19-22—LOUSIANA STATE FIREMEN'S ASSOCIATION. 24th Annual Convention, Jennings, La. Secretary, Chief A. J. Bethancourt, Houma, La.

Sept. 20-21—NEW JERSEY STATE FIREMEN'S ASSOCIATION. 52nd Annual Convention, Atlantic City, N. J. (Tentative date, to be definitely set later by Executive Committee). Secretary, William Exall, Room 602, Chamber of Commerce Bldg., Newark, N. J.

Oct. 1-3—FIREMEN'S ASSOCIATION OF THE STATE OF PENNSYLVANIA. 50th Annual Convention, Hotel Roosevelt, Pittsburgh, Pa. Secretary, Charles E. Clark, P. O. Box 217, Wayne, Pa.

Oct. 15-17—RAILWAY FIRE PROTECTION ASSOCIATION. Annual Meeting, Toronto, Can., Secretary-Treasurer, R. R. Hackett, Baltimore & Ohio Railroad, Baltimore, Md.

Oct. 21—SOUTHEASTERN FIRE CHIEFS ASSOCIATION. 2nd Annual Convention, Tutweiler Hotel, Birmingham, Ala. Secretary, Chief H. F. Whitner, Hickory, N. C.

Oct. 22-25—INTERNATIONAL ASSOCIATION OF FIRE CHIEFS. 57th Annual Convention, Hotel Tutweiler, Birmingham, Ala. Exhibits City Auditorium. Recording Secretary, Chief James J. Mulcahey, Yonkers, N. Y.; Executive Secretary, Jay W. Stevens, 113 Merchants Exchange Bldg., San Francisco, Cal.; Chairman, Exhibit Committee, Chief Selden R. Allen, Brookline, Mass.

May 12, week of, 1930—NATIONAL FIRE PROTECTION ASSOCIATION. 34th Annual Meeting, Atlantic City, N. J. 1931 Convention probably to be held in Toronto, Can. Secretary Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

May 14, 1930—DEL-MAR-VA. VOLUNTEER FIREMEN'S ASSOCIATION. 1st annual convention, Cambridge, Md. Secretary, J. Emory Parks, Cambridge, Md.

June, 1930—EASTERN ASSOCIATION OF FIRE CHIEFS. 3rd Annual Convention, Baltimore, Md. (Exact date to be decided later.) Secretary, Ex-Chief T. Howell Johnson, Room 602, Chamber of Commerce Bldg., Newark, N. J.

Department and Other Reports Received

Province of British Columbia, Canada—Seventh Annual report of the Fire Marshal giving fire statistics of the province; twenty-three pages and cover.

Fitchburg, Mass.—Fifty-sixth annual report of the fire department. Annual report of the fire chief and superintendent of fire alarm system; seventeen pages and cover.

Poughkeepsie, N. Y.—Annual report of the chief engineer giving list of members of volunteer department; sixty-four pages and cover.

Charleston, S. C.—Report of the Board of Fire-Masters. Report of the various divisions of the department. Contains chart of fires that occurred during year; twenty-four pages and cover.

Static Causes Fires in Cotton Gins

Static electricity is one of the principal causes of fires in cotton gins during the ginning process, says the United States Department of Agriculture. Fires in cotton gins cause a large annual loss in the United States, in some seasons amounting to $1,250,000. In 1917 cotton-gin fires in Texas alone caused a loss of approximately $1,000,000.

To refute the popular notion that matches cause most of the cotton-gin fires, engineers of the United States Department of Agriculture conducted some tests with matches during the ginning season in Texas. In these tests more than 600 matches were mixed with the seed cotton and run through the gin without causing a fire anywhere except in the huller breasts. Even there only four small fires occurred.

From these tests, the investigators concluded that more than 12,000,000 matches would in some manner have had to become mixed with the Texas cotton crop to cause all the fires recorded there during the year. Obviously, they say, matches in cotton are not entirely responsible for the large number of fires that occur in some seasons.

On the other hand, tests conducted to determine the effect of static electricity confirmed their belief that this is one of the principal causes of cotton-gin fires in the ginning season. Cotton can be ignited in this way, provided the cotton is fairly dry and the sparks frequent enough. During the investigations static electricity at times assumed such menacing proportions that the ginners were forced to take steps to remove it from their plants. Fires also were very common.

Some ginners have reduced the hazard by hanging wet bagging in the buildings, some by wetting down the plant and grounds every day, or even twice a day, and others by injecting a little steam into the suction pipe in the direction of the flow of cotton. Interest is being shown in the use of carbon-dioxide gas as a substitute for steam for fighting cotton-gin fires, especially since internal-combustion engines and electric motors appear to be supplanting the steam engine as a source of power in ginning. Systems using carbon dioxide or other inert gases have been developed for fire protection in other industries, and it may be possible to adapt this method of fire protection to cotton gins.

Prevention of fires from static electricity is readily accomplished by grounding the machinery.

Kensington, Pa., Firemen Build Own Ambulance—Members of the New Kensington, Pa., department have converted an automobile into a department ambulance.

Engine Goes Wild When Driver Dies—While going to a fire, the driver of the chemical car in Sea Cliff, N. Y., died at the wheel from a heart attack. One fireman was thrown from the apparatus, as the car ran into a curb. The unguided machine traveled at high speed until a fireman reached the emergency brake. It narrowly missed several vehicles.

Chiefs Attend Dixon, Cal., House Dedication—More than one hundred fire chiefs of southern California attended the opening of the new fire house in Dixon, Cal. Chief E. F. Coop, Pasadena, newly elected president of the Pacific Coast Association of Fire Chiefs, presented the compliments of his association. The Chiefs were en route to attend the convention in Vancouver, B. C., and stopped long enough to witness the dedication and to be guests of honor at a luncheon prepared for them by the fire department. As a parting gift, a box of peaches was placed in each car of the chiefs' special train.

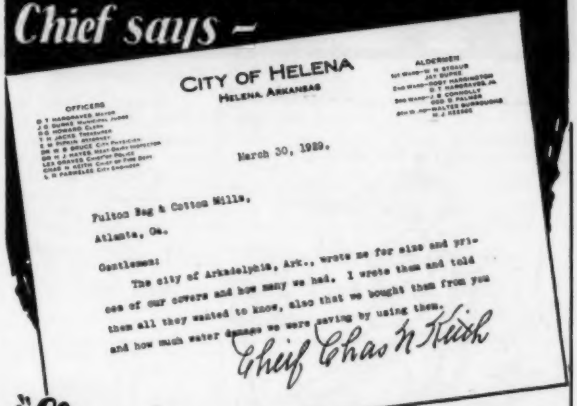
THE H-H INHALATOR FOR RESUSCITATION!

Hundreds of Fire Departments have installed H-H INHALATORS for the successful resuscitation of victims of carbon monoxide poisoning, gas asphyxia, electric shock, drowning, etc. The H-H INHALATOR is officially approved by the Association of Police and Fire Surgeons and the American Gas Association. Our representatives will be pleased to arrange a demonstration whenever you say.

Write for Free Copies of Bulletins No. 80 and 82

Mine Safety Appliances Co.
Braddock Ave & Thomas Blvd. Pittsburgh, Pa.

Another Prominent Fire Chief says –



CITY OF HELENA
HELENA, ARKANSAS

March 30, 1929.

Fulton Bag & Cotton Mills,
Atlanta, Ga.

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The city of Arkadelphia, Ark., wrote me for size and price of our covers and how many we had. I wrote them and told them all they wanted to know, also that we bought them from you and how much water damage we were saving by using them.

Chief Chas N Kirk

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More evidence of the importance of "Shuredry" Salvage Covers to every Fire Department, no matter where located.

Not only do Shuredry Covers cost less than rubber, they are much easier to handle and spread, and do not peel or crack when folded and stored.

Write our nearest plant for samples and prices.

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Brooklyn Dallas Atlanta, Ga. St. Louis Minneapolis
New Orleans Manufacturers Since 1870 Kan. City, Kan.

STERLING
No. 12

TRAFFIC ALWAYS OBEYS A STERLING NO. 12

Municipal traffic conditions grow more congested daily, but the congestion disappears like magic when drivers hear the STERLING No. 12.

Its unmistakable tone warns them the fire department is coming . . . the way is cleared for it. The STERLING No. 12 is giving service the world over.

Inclosed high speed ball bearing motor; balanced five inch fan; micrometer clearances; complete with bracket, cord and switch . . . $45.00 f.o.b. Rochester, N. Y.

Write for Bulletin 660

Sterling Siren Fire Alarm Co., Inc.
61 Allen Street Rochester, N. Y.

The Warning Shriek of a Siren!

A Flashing Red Light!

—And Traffic Makes Way for the Fire Department

Down the street rushes the fire department. Traffic must stop—*and it does.* The streets must be cleared—*and they are.* For the Harrington-Seaberg Signal has sounded the warning with its shrill siren blast and flashing red "STOP" light.

Are the congested areas in your city equipped with Harrington-Seaberg Warning Signals? Cities of every size the country over find them incomparable for those quick-action moments that come so unexpectedly.

Sturdy, faultless construction is your guarantee of dependability and durability. Write for descriptive literature.

Our Engineering Staff will be glad to offer suggestions for the solution of your traffic problems.

We also manufacture automatic and hand operated time limit switches to use with the traffic warning signals. Shall we send you detailed information?

EAGLE SIGNAL SALES CORPORATION
Subsidiary of Gamewell Company
DISTRIBUTORS OF
HARRINGTON-SEABERG PRODUCTS
Dept. G, MOLINE, ILLINOIS

FALSE ALARMS

—Drawing by "Art" Espey

A Play Pipe Holder

MAHOGANY IS POPULAR

The chief had just married and he was presented with a purse by his fellow citizens and members of the department. This he presented to his wife to be used in outfitting the home.

She called on a furniture dealer.

"I don't know whether to buy a brass or a mahogany bed."

Anxious to make a sale, the salesman replied, "Lady, you can't go wrong on a brass bed."

Society columns are being exposed by the backless bathing suits.

ALL THE BREAKS

Scene: Special train, convention bound.

Time: Long after the sun went down.

"Conductor, there's a man in my berth."

"Well, Number Thirteen ain't so unlucky then, is it, madam."

HE FIXED HIM

Rather than do battle with lunch wagon meals, the men of Station 9 arranged for a woman to cook the meals for them. But for the last few mornings she was having trouble with the butcher.

"Has the butcher been impudent again when you telephoned your order?" asked a fireman.

"Sure, but I fixed him," she replied. "I said, 'who the hell do you think you're talking to. This is the chief talking.'"

RUSHING THE CURE

No wonder Mac was sick. He swallowed enough smoke to last a normal man a lifetime. Luckily the others in his company did not fare as badly, but Mac was a sick man. He was ordered to report to the department doctor. Mac was directed to take a small glass of whiskey and some pills after each meal.

Four days later the doctor was surprised to see his patient.

"I ain't feeling no better, doctor."

"Have you taken the medicine as I told you do?"

"Weel doctor," replied the patient, "I may be a wee bit behind wi' the pills but I'm six weeks ahead wi' the whiskey."

"You say your girl's legs have no equal?"

"No, I said they had no parallel."

NO, THANK YOU!

She was young, pretty and possessed a car with that "damned if I will" attitude. Even before she could see an oncoming fire company, the traffic officer held up his hand and closed traffic. But since she knew she was good looking, she kept on coming. He rushed over to her.

"What's the idea! I'll have to give you a ticket.

Reaching for her brake she replied, "No thanks. I wouldn't care to go to a policeman's ball."

Gin is a drug on the market.

MERELY A SHOCK

Down in the engine room of the fireboat, every effort was being made to keep up full steam. An engine room hand went up to the one in charge and remarked:

"The thermometer has fallen, sir."

"Very much?"

"About five feet, sir."

The most recent example of a perfect pessimist is the man who bought cork tipped cigarettes for a sea voyage.

SELF EXPLANATORY

The fire department had been hampered for some time by motorists who imperiled the safety of apparatus going to a fire. The police department was notified. Shortly after this, Henry Jones was brought to court for failing to stop on the approach of fire apparatus. His defense was that he was arguing and did not hear the siren.

The judge asked, "and you were having words with your wife?"

"Not with her, your Honor—from her."

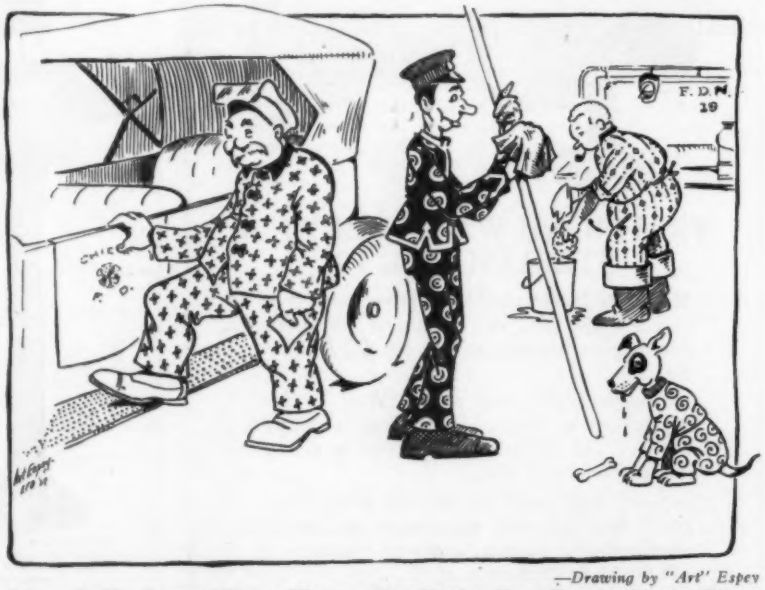
Every time fire apparatus goes dashing by it makes one wonder if the brave firemen are speeding to a big fire or if they are rushing back to an unfinished game of checkers.

MERELY A POINT OF VIEW

The fire commissioner was in the midst of his dictation in reference to a bond subscription to replace an older issue. He was puzzled concerning the proper term to use. He turned to his stenographer and asked:

"Do you retire a loan?"

The demure maiden replied with a yawn, "No, I sleep with mama."



—Drawing by "Art" Espey

There Is No Reason Why a Fireman Should Not Keep Trend with the Times

FIRE ENGINEERING prides itself as being a broadcaster of modern fire prevention and administration ideas. As soon as the modern craze for more freedom in men's attire took hold, "Art" Espey, creator of the more conspicuus fire department schemes was commissioned to introduce the fashion to this field. The above is the result. One advantage of the pajama craze is that it affords a greater variety of color combinations than does the staid blue uniforms. No one dares hazard a guess of what changes the freedom-for-men craze will bring about.

New Victor Gas and Fume Mask

Better Rubber. Longer Life. Better Fitted. Moulded to Fit the Face. Better Vision. Renewable Lenses. Better Air. Better Work. Low Prices. High Quality.

Over 5,000 Victor Gas Masks in Service

Full Line Fire Dept. Supplies and Equipment

New 43 Edition Catalog on Request

The Woodhouse Mfg. Co., Inc.

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Saves time - *and costly hose*

No. 1. (Capacity 3 to 7 tons; weight, each, 72 lbs.)

No. 2. (Capacity 3 to 12 tons; weight, each, 116 lbs.)

Complete Information and Prices on request.

It's often necessary to move apparatus at a fire. Automobile traffic hates to be held up by a line of hose stretched across the right of way.

Why ruin your hose by driving over it? Or waste valuable time cutting off and disconnecting?

The Wausau Protector is a big time and money saver—easy to handle and carry. Order a set today, or write us for particulars.

Wausau Fire Hose Protector Co.

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Fire Fighting Equipment

The quality of Pirsch fire fighting equipment is assured by more than seventy years of manufacturing experience. The Pirsch line is complete, chemical engines, ladder trucks, pumpers and Pirsch trussed fire ladders. Write.

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Are made of strong, heavy duck and lapped seams and are designed of such thickness and weight as to be light enough to be handled quickly and rigid enough for the most strenuous service. They are rubberized on both sides with a double coating of a high grade, long life, rubber compound.

CLIFTON SALVAGE COVERS are built to stand the heaviest abuse and are used by many of the large Protective Departments.

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Smoke and Fume Respirators

Positive protection against smoke, fumes and gases.

Price $5, Goggles $1 extra; Canisters 50 cents

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Here is the Ideal Hose Expander

in design, materials, workmanship and in speed and perfection of operation.

Be sure to get complete information from us before placing your orders for fire hose, extinguishers, roof manifolds . . . or any type of fire department nozzles, hose fittings, hydrant connections, hydrant gates, hose valves, siamese connections, wrenches and other tools, hose racks and reels, and other similar equipment.

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The A. B. C. Fire Prevention Mfg. Co.

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A·B·C Trade Mark

Be sure

and check the items that interest you on page 747

Baker Fabric

A jacket weave which provides multiple jacket strength with single jacket flexibility. Write for details.

MANUFACTURED EXCLUSIVELY BY

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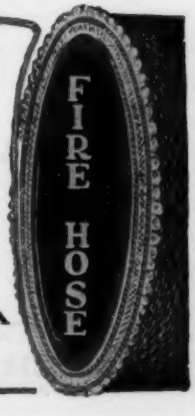

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Solve Your Arrester Problems

The experience and knowledge of our engineers are yours for the asking. If your fire alarm service is interrupted by lightning, sneak currents, and static, send in the facts and they will gladly explain the remedy.

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FIREMEN'S UNIFORMS

Thoroughly tailored of especially selected fabrics. Uniforms that look well, wear well and that will give entirely satisfactory service.

Reed's Uniforms are most economical because they represent full value for the amount expended.

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FIRE BOAT EQUIPMENT
Invincible and Callahan Nozzles
Fire Department Supplies

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221 High St. Established 1837 Boston, Mass.

CITY SERVICE HOOK and LADDER APPARATUS

We build both LIGHT and HEAVY HOOK AND LADDER TRUCKS. Equipped with our high grade ladders and miscellaneous equipment. Double Bank type—and very low to ground.

Write us when interested

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Builders of equipment to meet your requirements.
Specializing in Apparatus for Rural Fire Fighting.

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FIRE APPARATUS

Waterous Dependable

Send for our Complete Catalog
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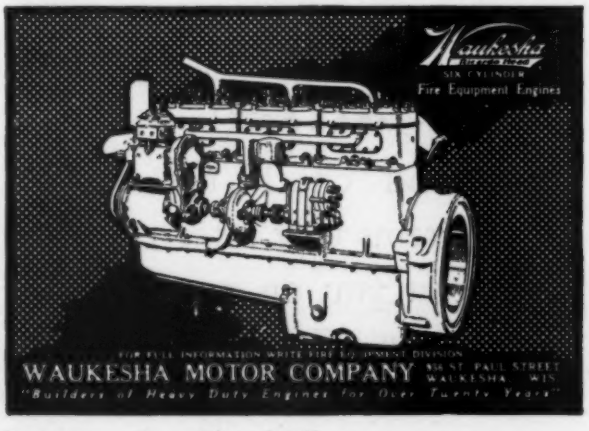
WATEROUS COMPANY
St. Paul, Minnesota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FOR FULL INFORMATION WRITE FIRE EQUIPMENT DIVISION
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1 Acid Siphons.
2 Adaptors for Changing Hydrant Threads.
3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
22 Caps, Firemen's.
23 Chains, Non-Skid Fire Apparatus.
24 Chassis for Fire Apparatus.
25 Chemical Engines and Tanks.
26 Chimney Cleaning Compounds.
27 City Service Trucks.
28 Coats & Suits, Firemen's Quick Hitch.
29 Combination Chemical & Hose Cars.
30 Cutting & Welding Equimpent Blow Torch.
31 Cutting & Welding Equipment, Electric.
32 Deluge Sets.
33 Door Openers, Fire Station, Automatic.
34 Extinguishers, Calcium Chloride.
35 Extinguishers, Carbon Dioxide.
36 Extinguishers, Soda-Acid.
37 Extinguishers, Carbon Tetrachloride.
38 Extinguishers, Foam.
39 Extinguishers, Powder.
40 Fire Boat Nozzle Equipment.
41 Fire Department Supplies, General.
42 Fire Exit Devices, Door Opening.
43 Fire Alarm Posts.
44 Fire Escapes, Portable.
45 Fire Escapes, Rigid.
46 First Aid Equipment.
47 Flare Lights.
48 Flashlights, Hand.
49 Foam Liquid for Extinguishers.
50 Gas Masks and Respirators.
51 Gas & Smoke Helmets.
52 Gasoline & Oil Handling Equipment.
53 Goggles, Firmen's.
54 Helmets, Metal, etc.

Help Yourself

Whenever you are in the market for new equipment you naturally want to get complete information from all reliable manufacturers before you place the orders for your department.

This page is a feature of every issue to make it convenient for you to get all this information without cost to you and without placing you under any obligation whatever to buy from any particular manufacturer.

You only have to run down the list of equipment and mail in the coupon below with your name and address and the numbers that indicate what you are interested in and we will then have the leading manufacturers of this equipment send you complete information direct—so why not let us help you get what you want? We are glad to be of service. Help yourself.

Fire Protection Equipment and Supplies

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57 Hose, Fire.
58 Hose, Chemical.
59 Hose Holders.
60 Hose Jackets.
61 Hose Standardization Tools.
62 Hydrant Draining Pumps.
63 Hydrants, Fire.
64 Jacks for Fire Trucks.
65 Jacks, Shoring & Prying.
66 Ladders, Fire.
67 Lightning Arresters.
68 Motorcycles, Fire Dept. Equipped.
69 Nets, Life.
70 Nozzles, Pipes & Misc. Brass Goods.
71 Packings, Pumps.
72 Pads, Pole Hole.
73 Paints, Fire Resisting.
74 Priming Ether, Motor.
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79 Pumps, Portable for Fire Protection.
80 Record Books, Fire.
81 Relief Valves.
82 Reviving Apparatus, Oxygen.
83 Rubber Clothing.
84 Searchlights.
85 Shingles, Fire Retardant.
86 Shirts, Firemen's Special.
87 Sirens, Apparatus & Chiefs' Cars.
88 Sliding Poles.
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90 Spark Plugs, Fire Apparatus & Motorcyles.
91 Squad and other Auxiliary Cars.
92 Sprinkler Head Shut-Offs.
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94 Sprinkler Systems, Automatic, Foam.
95 Sprinkler Systems, Automatic, Water.
96 Starters, Fire Apparatus, Automatic, Air.
97 Steam Fire Engines.
98 Tarpaulins & Fire Blankets.
99 Tetrachloride Chemicals.
100 Thawing Equipment, Hydrant.
101 Tires, Fire Apparatus, Pneumatic, Solid, Cushion and Non-Skid.
102 Tractors.
103 Traffic Clearing Systems.
104 Triple Combination Pumping Cars.
105 Uniforms.
106 Water Towers.
107 Wheels, Cushion.
108 Whistles, Fire Alarm, Compressed Air
109 Whistles, Fire Alarm, Steam.
110 Whistles, Fire Apparatus.
111 Wrecking Trucks.

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As a fire protection official I should like to have descriptive literature and complete information mailed to me, without cost or obligation, on the equipment indicated by the following numbers:

Date.....

Nos. .....

Nos. .....

Nos. .....

Nos. .....

Name .....

Position .....

Street .....

City and State.....

For Information on Any Equipment Not Listed, Write on This Page or Use Separate Sheet.

8-21

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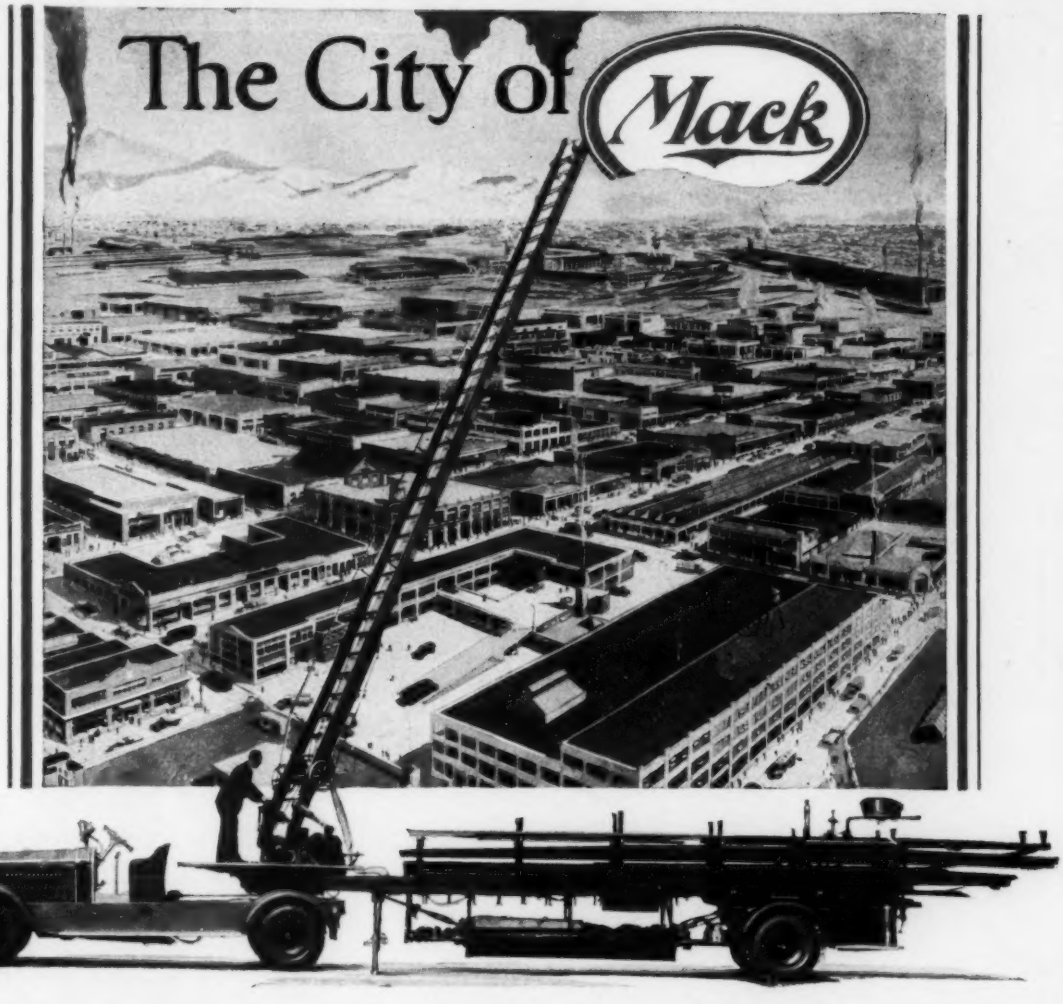

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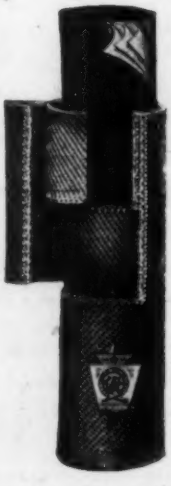

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